



**ARIZONA STATE UNIVERSITY**  
**GENERAL STUDIES COURSE PROPOSAL COVER FORM**

**Course information:**

Copy and paste current course information from [Class Search/Course Catalog](#).

Academic Unit W. P. Carey School of Business Department Information Systems  
 Computer Applications and Information  
 Subject CIS Number 105 Title Technology Units: 3  
 Is this a cross-listed course? No  
 If yes, please identify course(s) \_\_\_\_\_  
 Is this a shared course? No If so, list all academic units offering this course \_\_\_\_\_  
 Course description: \_\_\_\_\_

**Requested designation:** Mathematical Studies-CS  
*Note- a separate proposal is required for each designation requested*

**Eligibility:**  
 Permanent numbered courses must have completed the university's review and approval process.  
 For the rules governing approval of omnibus courses, contact the General Studies Program Office at (480) 965-0739.

**Area(s) proposed course will serve:**  
 A single course may be proposed for more than one core or awareness area. A course may satisfy a core area requirement and more than one awareness area requirements concurrently, but may not satisfy requirements in two core areas simultaneously, even if approved for those areas. With departmental consent, an approved General Studies course may be counted toward both the General Studies requirement and the major program of study.


- Checklists for general studies designations:**  
 Complete and attach the appropriate checklist
- [Literacy and Critical Inquiry core courses \(L\)](#)
  - [Mathematics core courses \(MA\)](#)
  - [Computer/statistics/quantitative applications core courses \(CS\)](#)
  - [Humanities, Fine Arts and Design core courses \(HU\)](#)
  - [Social and Behavioral Sciences core courses \(SB\)](#)
  - [Natural Sciences core courses \(SQ/SG\)](#)
  - [Global Awareness courses \(G\)](#)
  - [Historical Awareness courses \(H\)](#)
  - [Cultural Diversity in the United States courses \(C\)](#)

- A complete proposal should include:**
- Signed General Studies Program Course Proposal Cover Form
  - Criteria Checklist for the area
  - Course Syllabus
  - Table of Contents from the textbook and list of required readings/books

**Contact information:**

Name Angelina Saric Phone 5-4974  
 Mail code 4606 E-mail: angelina.saric@asu.edu

**Department Chair/Director approval: (Required)**

Chair/Director name (Typed): Michael Goul Date: 11/7/2014  
 Chair/Director (Signature): 

Arizona State University Criteria Checklist for

**MATHEMATICAL STUDIES [CS]**

**Rationale and Objectives**

The **Mathematical Studies** requirement is intended to ensure that students have skill in basic mathematics, can use mathematical analysis in their chosen fields, and can understand how computers can make mathematical analysis more powerful and efficient. The **Mathematical Studies** requirement is completed by satisfying both the **Mathematics [MA]** requirement and the **Computer/Statistics/Quantitative Applications [CS]** requirement explained below.

The **Mathematics [MA]** requirement, which ensures the acquisition of essential skill in basic mathematics, requires the student to complete a course in College Mathematics, College Algebra, or Precalculus, or demonstrate a higher level of skill by completing a mathematics course for which any of the first three courses in a prerequisite.

The **Computer/Statistics/Quantitative Applications [CS]** requirement, which ensures skill in real world problem solving and analysis, requires the student to complete a course that uses some combination of computers, statistics, and mathematics.

Approved: Feb. 2000

Proposer: Please complete the following section and attach appropriate documentation.

<b>ASU--[CS] CRITERIA</b>			
<b>A COMPUTER/STATISTICS/QUANTITATIVE APPLICATIONS [CS] COURSE MUST SATISFY ONE OF THE FOLLOWING CRITERIA: 1, 2, OR 3</b>			
YES	NO		Identify Documentation Submitted
		<b>1. Computer applications*:</b> courses must satisfy both <b>a</b> and <b>b</b> :	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>a.</b> Course involves the use of computer programming languages or software programs for quantitative analysis, modeling, simulation, animation, or statistics.	Course syllabus and table of contents for ebook and software; syllabus supplement with week 15/16 project; Appendix A Overview and Assignment Summary Documents
		<b>b.</b> Course requires students to analyze and implement procedures that are applicable to at least one of the following problem domains ( <b>check those applicable</b> ):	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>i.</b> Spreadsheet analysis, systems analysis and design, and decision support systems.	Course syllabus and table of contents for ebook and software; syllabus supplement with week 15/16 project; Appendix A Overview and Assignment Summary Documents
<input type="checkbox"/>	<input type="checkbox"/>	<b>ii.</b> Graphic/artistic design using computers.	
<input type="checkbox"/>	<input type="checkbox"/>	<b>iii.</b> Music design using computer software.	
<input type="checkbox"/>	<input type="checkbox"/>	<b>iv.</b> Modeling, making extensive use of computer simulation.	
<input type="checkbox"/>	<input type="checkbox"/>	<b>v.</b> Statistics studies stressing the use of computer software.	

## ASU--[CS] CRITERIA

\*The **computer applications** requirement **cannot** be satisfied by a course, the content of which is restricted primarily to word processing or report preparation skills; learning a computer language or a computer software package; or the study of the social impact of computers. Courses that emphasize the use of a computer software package or the learning of a computer programming language are acceptable, provided that students are required to understand, at an appropriate level, **the theoretical principles embodied in the operation of the software and are required to construct, test, and implement procedures that use the software to accomplish tasks in the applicable problem domains.**

		2. <b>Statistical applications:</b> courses must satisfy both <b>a</b> and <b>b</b> .	
<input type="checkbox"/>	<input type="checkbox"/>	<b>a.</b> Course has a minimum mathematical prerequisite of College Mathematics, College Algebra, or Precalculus, or a course already approved as satisfying the MA requirement.	
<input type="checkbox"/>	<input type="checkbox"/>	<b>b.</b> The course must be focused principally on developing knowledge in statistical inference and include coverage of all of the following:	
YES	NO		Identify Documentation Submitted
<input type="checkbox"/>	<input type="checkbox"/>	<b>i.</b> Design of a statistical study.	
<input type="checkbox"/>	<input type="checkbox"/>	<b>ii.</b> Summarization and interpretation of data.	
<input type="checkbox"/>	<input type="checkbox"/>	<b>iii.</b> Methods of sampling.	
<input type="checkbox"/>	<input type="checkbox"/>	<b>iv.</b> Standard probability models.	
<input type="checkbox"/>	<input type="checkbox"/>	<b>v.</b> Statistical estimation	
<input type="checkbox"/>	<input type="checkbox"/>	<b>vi.</b> Hypothesis testing.	
<input type="checkbox"/>	<input type="checkbox"/>	<b>vii.</b> Regression or correlation analysis.	
		3. <b>Quantitative applications:</b> courses must satisfy both <b>a</b> and <b>b</b> .	
<input type="checkbox"/>	<input type="checkbox"/>	<b>a.</b> Course has a minimum mathematical prerequisite of College Mathematics, College Algebra, or Precalculus, or a course already approved as satisfying the MA requirement.	

<b>ASU--[CS] CRITERIA</b>			
		<b>b.</b> The course must be focused principally on the use of mathematical models in quantitative analysis and design making. Examples of such models are:	
<input type="checkbox"/>	<input type="checkbox"/>	<b>i.</b> Linear programming.	
<input type="checkbox"/>	<input type="checkbox"/>	<b>ii.</b> Goal programming.	
<input type="checkbox"/>	<input type="checkbox"/>	<b>iii.</b> Integer programming.	
<b>YES</b>	<b>NO</b>		<b>Identify Documentation Submitted</b>
<input type="checkbox"/>	<input type="checkbox"/>	<b>iv.</b> Inventory models.	
<input type="checkbox"/>	<input type="checkbox"/>	<b>v.</b> Decision theory.	
<input type="checkbox"/>	<input type="checkbox"/>	<b>vi.</b> Simulation and Monte Carlo methods.	
<input type="checkbox"/>	<input type="checkbox"/>	<b>vii.</b> Other (explanation must be attached)	

Course Prefix	Number	Title	Designation
CIS	105	Computer Applications & Information Technology	CS

Explain in detail which student activities correspond to the **specific** designation criteria. Please use the following organizer to explain how the criteria are being met.

Criteria (from checksheet)	How course meets spirit (contextualize specific examples in next column)	Please provide detailed evidence of how course meets criteria (i.e., where in syllabus)
Course involves the use of computer programming languages or software programs for quantitative analysis, modeling, simulation, animation, or statistics	<p>- Develop the ability to value and master business information systems concepts, business applications, security concepts, and overall business systems. Create, and develop a mobile device application that demonstrates students analysis of a market need, interpretation of end-user ratings, identifying app life-cycle and usage, identifying monetization opportunities, developing code for software kits, testing and targeting critical marketing strategies, interpreting analytics and ROI</p> <p>- Illustrate and analyze the use of spreadsheet applications including formulas, functions &amp; their business applications, charts, modeling &amp; analysis, pivot tables, statistics within a spreadsheet, interpreting results within a organization, common applied business analyse for effective decision making; application in areas of inventory control, return on investment, accounting information systems, etc</p>	<p>- Corresponds to syllabus course objectives and learning outcomes, Concepts Lecturers, Exams, Mobile App Project; see Also Syllabus Supplement for weekly objectives; Appendix A Overview and Assignment Summary Documents</p> <p>- Week 2 Applications Skills introduced for rearranging and selecting records in a table                      Week 3 Applications Skills introduced for identifying relevant data in a table, for summarizing data in a table , and for evaluating financing alternatives when taking out a loan.                      Week 4 Applications Using conditional functions to differentiate among situations                      Week 5 Applications Categorizing and grouping data among different variable time periods                      Week 6 Applications Using charts and graphs for analysis and decision making                      Week 7 Applications Goal-seek, Scenario Manager, and Data Table tools introduced to support managerial decision</p>

	<p>- Illustrate and analyze the use of database applications including data storage, database queries, reporting and exporting data for interpreting results and understanding data to support decisions.</p> <p>Appendix A Overview and Assignment Summary documents</p>	<p>making                      Week 8 Applications                      Appraise company cash flow situation and financing requirements. Evaluating cell phone contracts                      Week 10 Applications                      Using different measures and dimensions to evaluate business performance. Tool introduced to do this is the pivot table                      See also Appendix A Overview and Assignment Summary documents</p> <p>- Week 12 Applications                      Selecting appropriate data from external sources for addition to a database. Validating data. Constructing forms to support decision making in a work flow process.                      Week 13&amp;14 Applications                      Designing, debugging and implementing queries to pull data to support business evaluations and decisions                      Week 15&amp;16 Applications                      Selecting and extracting data from a database for export to a spreadsheet. Data then analyzed to support decision making.                      See also Appendix A Overview and Assignment Summary documents</p>
<p>Coure requires students to analyze and implement procedures that are applicable to the following problem domains</p> <p>i. Spreadsheet analysis, systems analysis and design, and decision support systems</p>	<p>- (Spreadsheet analysis) Illustrate and analyze the use of spreadsheet applications including formulas, functions &amp; their business applications, charts, modeling &amp; analysis, pivot tables, statistics within a spreadsheet, interpreting results within a organization, common applied business analyse for effective decision making; application in areas of inventory control, return on investment, accounting information systems, etc</p>	<p>- Week 2 Applications                      Skills introduced for rearranging and selecting records in a table                      Week 3 Applications                      Skills introduced for identifying relevant data in a table, for summarizing data in a table , and for evaluating financing alternatives when taking out a loan.                      Week 4 Applications                      Using conditional functions to differentiate among situations                      Week 5 Applications                      Categorizing and grouping data among different variable time periods</p>

	<p>- (Systems Analysis and Design) Develop the ability to value and master business information systems concepts, business applications, security concepts, and overall business systems. Create, and develop a mobile device application that demonstrates students analysis of a market need, interpretation of end-user ratings, identifying app life-cycle and usage, identifying monetization opportunities, developing code for software kits, testing and targeting critical marketing strategies, interpreting analytics and ROI</p> <p>- (Decision Support Systems) Illustrate and analyze the use of database applications including data storage, database queries, reporting and exporting data for interpreting results and understanding data to support decisions.</p> <p>Appendix A Overview and Assignment Summary documents</p>	<p>Week 6 Applications Using charts and graphs for analysis and decision making Week 7 Applications Goal-seek, Scenario Manager, and Data Table tools introduced to support managerial decision making Week 8 Applications Appraise company cash flow situation and financing requirements. Evaluating cell phone contracts Week 10 Applications Using different measures and dimensions to evaluate business performance. Tool introduced to do this is the pivot table See also Appendix A Overview and Assignment Summary documents</p> <p>- Corresponds to syllabus course objectives and learning outcomes, Concepts Lecturers, Exams, Mobile App Project; see Also Syllabus Supplement for weekly objectives; Appendix A Overview and Assignment Summary Documents</p> <p>- Week 12 Applications Selecting appropriate data from external sources for addition to a database. Validating data. Constructing forms to support decision making in a work flow process. Week 13&amp;14 Applications Designing, debugging and implementing queries to pull data to support business evaluations and decisions Week 15&amp;16 Applications Selecting and extracting data from a database for export to a</p>
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		spreadsheet. Data then analyzed to support decision making. See also Appendix A Overview and Assignment Summary documents

## CIS 105 | Computer Applications and Information Technology

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**Instructors** Matt McCarthy | matthew.mccarthy@asu.edu  
Bob Wood | robert.e.wood@asu.edu

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### Course Objectives

This course will provide an introduction to business information systems from a business intelligence perspective. This course will introduce essential business information systems concepts like system software, platforms, and application software and their relationship to business. Concepts like Primary Storage, Secondary Storage, Data Storage, Mass Storage, Random Access Memory, Cache, BIOS, CMOS, and Cloud Storage with emphasis on business application and decisions. Additional principles include network applications, network deployment, topology and protocols including TCP/IP and UDP. Great emphasis is placed on database and spreadsheet packages for efficient and effective problem solving.

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### Learning Outcomes

- Understand the methods and approaches of business information systems.
- Develop critical and logical thinking skills by applying business information systems concepts and their relationships to best practices.
- Learn and understand the advantages and drawbacks of business computing concepts like first adopters, leaders, and followers.
- Become an “intelligent” part of any business information systems conversation.
- Understand Moore’s Law and its relationship to effective business decisions.
- Master spreadsheet Formulas and Functions and their business applications.
- Master spreadsheet application software for efficient and effective problem solving.
- Master spreadsheet concepts like Column Charts, Stacked Column Charts, Pie Charts, Line Charts, etc within a business environment.
- Master database application software for efficient and effective problem solving.
- Master database application software concepts like Database Tables, Relationships, Forms, Queries and importing data from external sources.
- Understand Productivity Suite Software packages.

### Course Materials

Required digital eBooks: *Applied Business Computing Concepts* (1 through 5) by McCarthy, ISBNs: 9780988635104, 9780988635111, 9780988635128, 9780988635135 and 9780988635142.

Required digital applications eBook: Prometheus Series: Microsoft Excel and Access 2013

## Schedule

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### Week One

**Introduction to Computer Information Systems 105** | First Day

Explanations and expectations of **Computer Information Systems 105**

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### Week Two

**Concepts Lecture | Chapter 1: Business Information Technology** | (Monday Tuesday w/McCarthy)

Topics | Information Systems, Operating Systems, System Software, Application Software...

Digital Book | *Applied Business Computing Concepts 1*, Chapter 1

**Applications Lecture | Excel Basics** | (Wednesday Thursday classes w/Wood)

1.1 Excel Basics: Getting Started with Excel, 1.2 Cells and Worksheets, 1.3 Formatting Cells and Sheets, 1.4 Sorting and Filtering, 1.5 Test Your Skills: Excel Basics

Online Book | *Prometheus Series: Microsoft Excel and Access 2013*

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### Week Three

**Concepts Lecture | Chapter 2: Inside the Computer** | (Monday Tuesday w/McCarthy)

Topics | System Unit, Microprocessor Configurations, Input, Output, Expansion Slots, Cards...

Digital Book | *Applied Business Computing Concepts 1*, Chapter 2

**Applications Lecture | Formulas and Functions** | (Wednesday Thursday classes w/Wood)

2.1 References and Calculations, 2.2 Summary Statistics Functions, 2.3 Financial Functions, 2.4 Formula Auditing, 2.5 Test Your Skills: Formulas and Functions

Online Book | *Prometheus Series: Microsoft Excel and Access 2013*

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### Week Four

**Concepts Lecture | Chapter 3: Operating Systems** | (Monday Tuesday w/McCarthy)

Topics | Windows, Mac OS, Linux, UNIX, Multitasking, Disk Management, Networking, Drivers...

Digital Book | *Applied Business Computing Concepts 1*, Chapter 3

**Applications Lecture | Logic and Reference Functions** | (Wednesday Thursday classes w/Wood)

3.1 Boolean Functions, 3.2 The "IF" Function, 3.3 Conditional Functions, 3.4 Reference Functions, 3.5 Test Your Skills: Logic and Reference Functions

Online Book | *Prometheus Series: Microsoft Excel and Access 2013*

**EXAM ONE** | Covers Applied Business Computing Concepts 1, Chapters 1, 2, and 3. Includes all concept and application lecture notes.

## Week Five

### **Concepts Lecture | Chapter 4: Storage |** *(Monday Tuesday w/McCarthy)*

Topics | Primary, Secondary, Data Storage, Mass, RAM, CPU Cache, BIOS, CMOS, Cloud Storage...

Digital Book | *Applied Business Computing Concepts 2*, Chapter 4

### **Applications Lecture | Date, Time, and Text Functions |** *(Wednesday Thursday classes w/Wood)*

4.1 Date and Time Functions, 4.2 Text Functions, 4.3 Test Your Skills: Date, Time, and Text Functions

Online Book | *Prometheus Series: Microsoft Excel and Access 2013*

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## Week Six

### **Concepts Lecture | Chapter 5: Applications |** *(Monday Tuesday w/McCarthy)*

Topics | Word Processors, Spreadsheets, Database, Presentation, Browser, Specialized Apps...

Digital Book | *Applied Business Computing Concepts 2*, Chapter 5

### **Applications Lecture | Charting |** *(Wednesday Thursday classes w/Wood)*

5.1 The Charting Environment, 5.2 Column Charts, 5.3 Stacked Column Charts, 5.4 Pie Charts, 5.5 Line Charts, 5.6 Test Your Skills: Test Your Skills: Charting

Online Book | *Prometheus Series: Microsoft Excel and Access 2013*

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## Week Seven

### **Concepts Lecture | Chapter 6: Why the Computer Works |** *(Monday Tuesday w/McCarthy)*

Topics | System Software, BIOS, Memory Management, Interfacing, Utilities, File Management...

Digital Book | *Applied Business Computing Concepts 2*, Chapter 6

### **Applications Lecture | Modeling Basics |** *(Wednesday Thursday classes w/Wood)*

6.1 Modeling Basics: Building Spreadsheet Models, 6.2 Modeling Basics: Analyzing Spreadsheet Models Using What-If Analyses, 6.3 Test Your Skills: Test Your Skills: Modeling Basics

Online Book | *Prometheus Series: Microsoft Excel and Access 2013*

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**EXAM TWO** | Covers Applied Business Computing Concepts 2, Chapters 4, 5, and 6. Includes all concept and application lecture notes.

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## Week Eight

### **Concepts Lecture | Chapter 7: Green Business Computing |** *(Monday Tuesday w/McCarthy)*

Topics | Green Computing, Business Energy Costs, EPEAT Criteria, EPA, Green PCs, Green Business Plan...

Digital Book | *Applied Business Computing Concepts 3*, Chapter 7

### **Applications Lecture | Advanced Modeling |** *(Wednesday Thursday classes w/Wood)*

7.1 Using Multiple Worksheets and Named Ranges, 7.2 Working with Circular References in Excel, 7.3 Test Your Skills: Advanced Modeling

Online Book | *Prometheus Series: Microsoft Excel and Access 2013*

## Week Nine

### **Concepts Lecture | Chapter 8: Networks** | *(Monday Tuesday w/McCarthy)*

Topics | Clients, Servers, Peripherals, Collaboration, Topology, TCP/IP, UDP, Administration, LANs...

Digital Book | *Applied Business Computing Concepts 3*, Chapter 8

### **Applications Lecture | Statistics** | *(Wednesday Thursday classes w/Wood)*

8.1 Determining Model Inputs, 8.2 Test Your Skills: Statistics

Online Book | *Prometheus Series: Microsoft Excel and Access 2013*

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## Week Ten

### **Concepts Lecture | Chapter 9: Internet** | *(Monday Tuesday w/McCarthy)*

Topics | History, HTML, HTTP, IP Address, Browsers, eCommerce, Content, Intranets, Cache...

Digital Book | *Applied Business Computing Concepts 3*, Chapter 9

### **Applications Lecture | Analyzing Data with PivotTables** | *(Wednesday Thursday classes w/Wood)*

9.1 PivotTables, 9.2 Test Your Skills: Pivot Tables

Online Book | *Prometheus Series: Microsoft Excel and Access 2013*

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**MIDTERM EXAM** | Covers Applied Business Computing Concepts 1,2, and 3, Chapters 1, 2, 3, 4, 5,6, 7, 8, and 9. Includes all concept and application lecture notes.

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## Week Eleven

### **Concepts Lecture | Chapter 10: Websites** | *(Monday Tuesday w/McCarthy)*

Topics | HTML, HTTP, Monetization, Server, Host, Meta, JavaScript, Flash, Fat Client, Thin Client...

Digital Book | *Applied Business Computing Concepts 4*, Chapter 10

### **Applications Lecture | Optimization Analysis** | *(Wednesday Thursday classes w/Wood)*

10.1 Building Optimization Models, 10.2 Using Solver for Optimization, 10.3 Test Your Skills: Solver

Online Book | *Prometheus Series: Microsoft Excel and Access 2013*

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## Week Twelve

### **Concepts Lecture | Chapter 11: Security** | *(Monday Tuesday w/McCarthy)*

Topics | Risk Management, Privacy, Firewall, Intranet, Malware, DOS Attack, Solutions, Fraud...

Digital Book | *Applied Business Computing Concepts 4*, Chapter 11

### **Applications Lecture | Storing Data in Access** | *(Wednesday Thursday classes w/Wood)*

11.1 Getting Started with Access, 11.2 Database Tables and Relationships, 11.3 Working with Forms, 11.4 Importing Records from External Sources, 11.5 Test Your Skills: Storing Data in Access

Online Book | *Prometheus Series: Microsoft Excel and Access 2013*

## Week Thirteen

**Concepts Lecture | Chapter 12: Information Systems in Business |** *(Monday Tuesday w/McCarthy)*

Topics | Business Functions, Roles, IT Roles in Accounting, HR, Marketing, R&D, Production, Reporting...

Digital Book | *Applied Business Computing Concepts 4*, Chapter 12

**Applications Lecture | Database Queries |** *(Wednesday Thursday classes w/Wood)*

12.1 Simple Database Queries, 12.2 Using Queries to Find Specific Records, 12.3 Creating Queries with Special Criteria, 12.4 Test Your Skills: Basic Queries

Online Book | *Prometheus Series: Microsoft Excel and Access 2013*

**EXAM FOUR** | Covers Applied Business Computing Concepts 4, Chapters 10, 11, and 12. Includes all concept and application lecture notes.

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## Week Fourteen

**Concepts Lecture | Chapter 13: Careers |** *(Monday Tuesday w/McCarthy)*

Topics | Perceptions, IT Jobs, Business Intelligence, Analytics, ERPs, UML, SDLC, RAD, Prototyping...

Digital Book | *Applied Business Computing Concepts 5*, Chapter 13

**Applications Lecture | Intermediate Queries |** *(Wednesday Thursday classes w/Wood)*

13.1 Multi-table and Parameter Queries, 13.2 Aggregate Queries, 13.3 Queries with Calculated Fields, 13.4 Crosstab Queries, 13.5 Test Your Skills: Intermediate Queries

Online Book | *Prometheus Series: Microsoft Excel and Access 2013*

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## Week Fifteen

**Concepts Lecture | Chapter 14: Database |** *(Monday Tuesday w/McCarthy)*

Topics | Structure, SQL, Database Queries, Case Study, Best Practice,

Digital Book | *Applied Business Computing Concepts 5*, Chapter 14

**Applications Lecture | Getting Data out of Access |** *(Wednesday Thursday classes w/Wood)*

14.1 Creating Reports In Access, 14.2 Exporting Data from Access, 14.3

Online Book | *Prometheus Series: Microsoft Excel and Access 2013*

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## Week Sixteen

**Concepts Lecture | Chapter 15: Cloud Computing |** *(Monday Tuesday w/McCarthy)*

Topics | Cloud Structure, iDrives, CSPs, TOS, SaaS, Open Office, PaaS...

Digital Book | *Applied Business Computing Concepts 5*, Chapter 15

**Applications Lecture | Getting Data out of Access |** *(Wednesday Thursday classes w/Wood)*

Test Your Skills: Getting Data Out of Access

Online Book | *Prometheus Series: Microsoft Excel and Access 2013*

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**FINAL EXAM** | Covers Applied Business Computing Concepts 4 and 5, Chapters 10, 11, 12, 13, 14, and 15. Includes all concept and application lecture notes.

## **Academic Integrity**

Academic Integrity: From the ASU General Catalog: "...the highest standards of academic integrity are expected of all students. Failure to meet these standards may result in suspension or expulsion from the university and other sanctions as specified in the academic integrity policies of the individual colleges. Violations of academic integrity include, but are not limited to cheating, fabrication, tampering, plagiarism, or facilitating such activities..." Read the Academic Integrity Policies from the ASU General Catalog or website extremely carefully. Do your own work.

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## **Disability Resource Center**

Every effort will be made to accommodate students with disabilities. When requesting accommodations for a disability, students should register with the Disability Resource Center (DRC), and then submit appropriate documentation through it. <http://www.asu.edu/aad/manuals/ssm/ssm701-01.html>

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## **Exam and Late Assignment Policy**

To receive full credit on assignments you must submit them on time. With a documented excuse, assignments may be submitted up to a week late and receive half credit. Assignments for which no credit is given will still be accepted by the system and feedback provided to the student. No retakes on missed exams.

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## **Grading Scale**

97+	A+
93 to 96.9	A
90 to 92.9	A-
87 to 89.9	B+
83 to 86.9	B
80 to 82.9	B-
77 to 79.9	C+
70 to 76.9	C
60 to 69.9	D
Below 60	E

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## Syllabus Supplement with week 15/16 project

Course Number: CIS105

Week One   Business Information Systems			
Assignment	Examination	Lecture / Reading	Project
<b>Description:</b> A 75 minute-long in-class lecture summarizing <i>Applied Business Computing Concepts</i>   Chapter One   Business Information Systems			
<b>Coverage:</b> Develop and illustrate broad concepts like; Business Information Systems, Information Technology, Operating Systems, System Software, Application Software, Hardware, Word Processing, Spreadsheets, Database, Presentation Software, Specific-use Application Software, Browsers, Basic Network Concepts, Moore's Law			
<b>Critical Thinking Topics:</b> How fast is information technology moving forward? Does Google Earth become Google Live? If Google Earth can update it maps faster and faster, will it someday become live feeds from outer space? Can it catch me speeding down a highway? If Moore Law is still in play, will technology cost more or less in the future?			
<b>Decisions / Actions Required:</b> After lecture and reading concepts are examined, assess some of the following; With the premise that technology is hurdling forward a furious pace; the question is posed as to how to make business decisions when choosing technology? Will the technology your business chose be outdated in 18 to 36 months according to Moore's Law? Did your business select the right technology (software, platform, etc?) Did your business choices give your business a competitive edge? Summarize what implications will this have on privacy. Justify and support your conclusions.			

Week Two   Inside the Computer			
Assignment	Examination	Lecture / Reading	Project
<b>Description:</b> A 75 minute-long in-class lecture summarizing <i>Applied Business Computing Concepts</i>   Chapter Two   Inside the Computer			
<b>Coverage:</b> Develop and illustrate concepts like; System Units, Microprocessor Configurations, Input, Output, Expansion Slots and Cards, Binary Concepts, ASCII			
<b>Critical Thinking Topics:</b> If you own a car, do you fix it when it breaks? If you own a computer, do you fix it when it breaks? If not, then why be concerned about the inner-workings of PCs, Mac, etc? The lecture suggests that a business executive may someday have to lease or purchase a fleet of cars and it becomes important to know how cars and finance works. The lecture continues by suggesting an executive may have to purchase or lease many computers, networks, etc.			
<b>Decisions / Actions Required:</b> After lecture and reading concepts are examined, assess some of the following; How does a motherboard, microprocessor chip, bus lines, etc work, and why is it important to know? When selecting technology, does proprietary hardware and software matter? Justify and support your conclusions.			

Week Three   Operating Systems			
Assignment	Examination	Lecture / Reading	Project
<b>Description:</b> A 75 minute-long in-class lecture summarizing <i>Applied Business Computing Concepts</i>   Chapter Three   Operating Systems			
<b>Coverage:</b> Develop and illustrate concepts like; Operating Systems, Point outing Operating Systems, Processes, Multitasking, Memory Management, Storage, Disk Management, File Management, Networking, Device Drivers, Graphical User Interface, Embedded Operating Systems, Microsoft Windows, Mac OS, Major Operating Systems, Open Source Operating Systems			
<b>Critical Thinking Topics:</b> It can be argued that the Mac OS is architecturally far superior (RAM usage etc) to the MS Windows platform, yet Windows dominates in the business environment. MS Windows, UNIX and Mac OS are proprietary and Linux in non-proprietary and free; how can this be?			
<b>Decisions / Actions Required:</b> After lecture and reading concepts are examined, assess some of the following; Does it matter what OS is used in business? Assess what one OS does that others don't. Point out what operating systems and system software do in a computing environment. Select operating system(s) for a specific business. Justify and support your conclusions.			

Week Three   Examination			
Assignment	Examination	Lecture / Reading	Project
<b>Description:</b> A timed, 75 minute-long examination summarizing <i>Applied Business Computing Concepts</i> chapters 1, 2, and 3 and in-class lecture notes			

Week Four   Storage			
Assignment	Examination	Lecture / Reading	Project
<b>Description:</b> A 75 minute-long in-class lecture summarizing <i>Applied Business Computing Concepts</i>   Chapter Four   Storage			
<b>Coverage:</b> Develop and illustrate concepts like; Business Network Options, Data Storage, Ones and Zeros, Physical Storage characteristics, Business Storage Strategies, Data Archiving, Data Backup, Cloud Storage, Primary Storage, Secondary Storage, Data Storage, Mass, RAM, CPU Cache, BIOS, CMOS, Cloud Storage			
<b>Critical Thinking Topics:</b> How should my business take advantage of storage options like the cloud, networks, mass storage, etc? If a company selects a cloud-based technology, is their data and information secured?			
<b>Decisions / Actions Required:</b> After lecture and reading concepts are examined, assess some of the following; Decide why you would select the cloud over a network. Assess mass storage options for a large business like eBay.com. Point out the difference between backing-up and archiving. Assess if the cloud will replace traditional network models and back-up devices. Justify and support your conclusions.			



## Syllabus Supplement with week 15/16 project

Week Five   Applications			
Assignment	Examination	Lecture / Reading	Project
<b>Description:</b> A 75 minute-long in-class lecture summarizing <i>Applied Business Computing Concepts</i>   Chapter Five   Applications			
<b>Coverage:</b> Develop and illustrate concepts like; Application Software, Business Application Software Suites, Word Processors, Spreadsheets, Database, Presentation, Browser, Specialized App, Digital Books, Sharing Information, Best Practice, Developing an Application, SDLC, Monetizing an App			
<b>Critical Thinking Topics:</b> Can a PDF format from Adobe Acrobat be more effective than MS Word's ".docx" format? When is it best to use a spreadsheet? When is it best to use a database? How does a "what-if" analysis work in a "Profit / Loss" spreadsheet? How can a business make money on an App? If you were going to make your own App, what would it do? Is there a market for your App? How would you make money on your App?			
<b>Decisions / Actions Required:</b> After lecture and reading concepts are examined, assess some of the following; Summarizing an SDLC, can your idea for an App go from feasibility to implementation? Assess choosing a software suite for an entire business. Assess what applications work best summarizing available hardware. Assess how to monetize an application like Twitter. Justify and support your conclusions.			

Week Six   Why the Computer Works			
Assignment	Examination	Lecture / Reading	Project
<b>Description:</b> A 75 minute-long in-class lecture summarizing <i>Applied Business Computing Concepts</i>   Chapter Six   Why the Computer Works			
<b>Coverage:</b> Develop and illustrate concepts like; System Software, BIOS, Memory Management, Interfacing, Utilities, File Management, Starting the Computer, Administering Application Software, Device Drivers, Interfacing, Backup Utilities, Antivirus Utilities, System Updates			
<b>Critical Thinking Topics:</b> What's the point of BIOS and why is it the starting point? How does firmware work and enable an operating system? If an operating system is updated, is it ever really finished? Why do we pay for new operating system versions if they are constantly updated? Does Microsoft force peripheral manufacturers to supply device drivers?			
<b>Decisions / Actions Required:</b> After lecture and reading concepts are examined, assess some of the following; Determine what to do if the device drivers of your digital camera were not a part of MS Windows; would your business suffer? Would customers purchase your product?			

Week Six   Examination			
Assignment	Examination	Lecture / Reading	Project
<b>Description:</b> A timed, 75 minute-long examination summarizing <i>Applied Business Computing Concepts</i> chapters 4, 5, and 6 and in-class lecture notes			

Week Seven   Green Business Computing			
Assignment	Examination	Lecture / Reading	Project
<b>Description:</b> A 75 minute-long in-class lecture summarizing <i>Applied Business Computing Concepts</i>   Chapter Seven   Green Business Computing			
<b>Coverage:</b> Develop and illustrate concepts like; Green Computing, Business Energy Costs, EPEAT Criteria, EPA, Green PCs, Green Business Plans, Energy Star Specifications, Telecommuting			
<b>Critical Thinking Topics:</b> What impact does climate change and global warming have on information technology? Is a Gold Star rating from EPEAT worth pursuing as a device manufacturer? Do concepts like telecommuting affect other industries like airlines? Is a Green Business Plan valuable if it is not profitable? Would you move your manufacturing to a different country if your business would be more profitable but meant your product would be less green?			
<b>Decisions / Actions Required:</b> After lecture and reading concepts are examined, assess some of the following; Discuss climate change diffusive ideas and how business' can profit and still remain green. Understand if green industries are viable in a global economy.			

Week Eight   Networks			
Assignment	Examination	Lecture / Reading	Project
<b>Description:</b> A 75 minute-long in-class lecture summarizing <i>Applied Business Computing Concepts</i>   Chapter Eight   Networks			
<b>Coverage:</b> Develop and illustrate concepts like; Clients, Servers, Peripherals, Collaboration, Topology, TCP/IP, UDP, Administration, LANs, Building a Computer Network, Network Operating Systems, Cloud Technology			
<b>Critical Thinking Topics:</b> Will Cloud technology replace traditional networks? Why was Limewire's music sharing network based on a peer-to-peer topology instead of traditional Star or Bus topologies? Why is it so important to have a good network administrator? Who gets to see information on a network? Are nodes (printers, copy machines, etc) memory reason for privacy concerns on a network?			
<b>Decisions / Actions Required:</b> After lecture and reading concepts are examined, assess some of the following; Discuss corporate policies concerning surfing the World Wide Web for your employees on a business network. Consider objectionable content cached on an employee's computer from Internet surfing. Discuss wireless networks and their security.			

Week Nine   Internet			
Assignment	Examination	Lecture / Reading	Project
<b>Description:</b> A 75 minute-long in-class lecture summarizing <i>Applied Business Computing Concepts</i>   Chapter Nine   Internet			

## Syllabus Supplement with week 15/16 project

<p><b>Coverage:</b> Develop and illustrate concepts like; History, HTML, HTTP, IP Address, Browsers, eCommerce, Content, Intranets, Cache, WWW Structure, Websites, Search Engines,</p> <p><b>Critical Thinking Topics:</b> How has the Internet affected other non information technology businesses like airlines? What content should or should not be on the Internet? Who controls the WWW and Internet? Considering its content and nature, if the internet was a form of government, what kind would it be?</p> <p><b>Decisions / Actions Required:</b> After lecture and reading concepts are examined, assess some of the following; Applying Gordon Moore's Law to the Internet, where will it be in 10, 20, or 100 years? Discuss what industries will grow and decline because of the Internet.</p>
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Week Nine   Cumulative Midterm Examination			
Assignment	Examination	Lecture / Reading	Project
<p><b>Description:</b> A timed, 105 minute-long examination summarizing <i>Applied Business Computing Concepts</i> chapters 1, 2, 3, 4, 5, 6, 7, 8, and 9 and in-class lecture notes</p>			

Week Ten   Websites			
Assignment	Examination	Lecture / Reading	Project
<p><b>Description:</b> A 75 minute-long in-class lecture summarizing <i>Applied Business Computing Concepts</i>   Chapter Ten   Websites</p>			
<p><b>Coverage:</b> Develop and illustrate concepts like; HTML, HTTP, Monetization, Server, Host, Meta, JavaScript, Flash, Fat Client, Thin Client, Business website Alternatives, Early Website Technology, Website Style and Categories, SEO</p>			
<p><b>Critical Thinking Topics:</b> Why is Hypertext Markup Language the basis for all web pages? Why are browsers essentially all doing the same thing? If a fat Client application is written with a robust language that is not supported by a browser, can it be rewritten as a Thin Client with a less robust language like HTML? Why is content the most important aspect of a website? How does content get monetized on a website?</p>			
<p><b>Decisions / Actions Required:</b> After lecture and reading concepts are examined, assess some of the following; Discuss corporate policies concerning surfing the World Wide Web for your employees on a business network. Consider objectionable content cached on an employee's computer from Internet surfing. Discuss wireless networks and their security. Assess a website that has desirable content but has poor SEO.</p>			

Week Eleven   Security			
Assignment	Examination	Lecture / Reading	Project
<p><b>Description:</b> A 75 minute-long in-class lecture summarizing <i>Applied Business Computing Concepts</i>   Chapter Eleven   Security</p>			
<p><b>Coverage:</b> Develop and illustrate concepts like; Risk Management, Privacy, Firewall, Intranet, Malware, DOS Attack, Solutions, Fraud, System Security, Passwords, Identity Theft, Computer Privacy</p>			
<p><b>Critical Thinking Topics:</b> Why is Risk Management more than just an information technology topic? Why do malware threats exist? Do the benefits of an Intranet outweigh the risk of loss of privacy, Internet fraud, malware attacks, etc.? Does the emergence of Cloud technologies mean to be more or less vigilant when it comes to computer security?</p>			
<p><b>Decisions / Actions Required:</b> After lecture and reading concepts are examined, assess some of the following; Consider if Hurricane Katrina just recently occurred; how would this change your risk management and disaster recovery plans? Discuss what happens when a data breach occurs; how did it happen, who does it threaten, etc.?</p>			

Week Twelve   Information Systems in Business			
Assignment	Examination	Lecture / Reading	Project
<p><b>Description:</b> A 75 minute-long in-class lecture summarizing <i>Applied Business Computing Concepts</i>   Chapter Twelve   Information Systems in Business</p>			
<p><b>Coverage:</b> Develop and illustrate concepts like; Business Functions, Business Departments, Roles, IT Roles in Accounting, HR, Marketing, R&amp;D, Production, Business Systems Reporting, Information Systems Collaboration, TCP, Detail vs. Summarization, Knowledge Management Systems</p>			
<p><b>Critical Thinking Topics:</b> Why is business system reports typically more summarized at the executive level? Why do business functional behavior groups see the need to collaborate? Why do Research and development departments take systematic approaches to their roles?</p>			
<p><b>Decisions / Actions Required:</b> After lecture and reading concepts are examined, assess some of the following; Given that TCPs are firmly based on database platforms, discuss what happens to all reports, both summarized and detailed if the data is incorrect. Consider how a TCP database ensures that all reports are reconciled to each other? Consider that you have been hired by a business for your intellectual property; would you contribute your intellectual property to a Knowledge Management System knowing it would help the business but lessen your value to said business?</p>			

Week Twelve   Examination			
Assignment	Examination	Lecture / Reading	Project
<p><b>Description:</b> A timed, 75 minute-long examination summarizing <i>Applied Business Computing Concepts</i> chapters 10, 11, and 12 and in-class lecture notes</p>			

Week Thirteen   Careers			
Assignment	Examination	Lecture / Reading	Project
<p><b>Description:</b> A 75 minute-long in-class lecture summarizing <i>Applied Business Computing Concepts</i>   Chapter Thirteen   Careers</p>			

## Syllabus Supplement with week 15/16 project

<p><b>Coverage:</b> Develop and illustrate concepts like; Perceptions, IT Jobs, Business Intelligence, Analytics, ERPs, UML, SDLC, RAD, Prototyping</p> <p><b>Critical Thinking Topics:</b> Why do people in the Information Technology fields find it easier to switch careers? Which methodology is best when developing an App for a mobile device? How can analytics help with App monetization strategies?</p> <p><b>Decisions / Actions Required:</b> After lecture and reading concepts are examined, assess some of the following; The state you live in doesn't allow outsourcing of any kind. A UML "blueprint" was already sent to an IT company in India who say they can write your program for \$5 million USD. The lowest in-state bid for the same UML specifications is \$30 million. Discuss your options.</p>
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Week Fourteen   Database			
Assignment	Examination	Lecture / Reading	Project
<p><b>Description:</b> A 75 minute-long in-class lecture summarizing <i>Applied Business Computing Concepts</i>   Chapter Fourteen   Database</p>			
<p><b>Coverage:</b> Develop and illustrate concepts like; Structure, SQL, Database Queries, Case Study, Best Practice</p>			
<p><b>Critical Thinking Topics:</b> Can a database used poorly have a profound effect on a business? Why do spreadsheet users resist relational database software? Do large organizations sell database information?</p>			
<p><b>Decisions / Actions Required:</b> After lecture and reading concepts are examined, assess some of the following; Consider a network distributed DBMS that tracks the real estate assets of a major bank with inaccurate data. How can the data and information be updated and reconciled? What are some of the repercussions of "bad" data and information? How can data and information be audited?</p>			

Week Fifteen   Cloud Computing			
Assignment	Examination	Lecture / Reading	Project
<p><b>Description:</b> A 75 minute-long in-class lecture summarizing <i>Applied Business Computing Concepts</i>   Chapter Fifteen   Cloud Computing</p>			
<p><b>Coverage:</b> Develop and illustrate concepts like; Cloud Structure, iDrives, CSPs, TOS, StaaS, SaaS, Open Office, PaaS</p>			
<p><b>Critical Thinking Topics:</b> Can cloud computing replace traditional networks? Is data and information in the Cloud safe and secure? What are some of the advantages and disadvantages of the Cloud relative to disaster recovery?</p>			
<p><b>Decisions / Actions Required:</b> After lecture and reading concepts are examined, assess some of the following; Consider a disaster recovery plan where one organization has backed up all their data and information on external hard drive(s) from their local area network, and a similar organization backed up their data and information on the cloud. Discuss the merits of each plan including the advantages and disadvantages of both.</p>			

Week Fifteen   Mobile App Project			
Assignment	Examination	Lecture / Reading	Project
<p><b>Description:</b> A 105 minute-long in-class seminar summarizing the System Development Life Cycle of mobile app construction, monetization, deployment, app platforms</p>			
<p><b>Coverage:</b> Develop and illustrate concepts like; App Construction, SDLC, App Monetization, Software Development Kits, App Deployment, App Platforms,</p>			
<p><b>Critical Thinking Topics:</b> Which App Platform is best? Which computer language (SDK) is best for the App and where it is deployed? Why is the SDLC so important in App Development?</p>			
<p><b>Decisions / Actions Required:</b> Construct an original App (preferably a game App) following a specific system development life cycle and deploy it to an appropriate repository of your choosing (iTunes, Windows 8 Store, Android). Consider if you constructed your App with Apple's xCode SDK but it only worked for iPhones. Would you need to learn another language to deploy the same App on a different platform like Android? Evaluate how do different platforms differ from one another? Can you easily modify your App and deploy it as a different App?</p>			

Week Sixteen   Cumulative Final Examination			
Assignment	Examination	Lecture / Reading	Project
<p><b>Description:</b> A timed, 105 minute-long examination summarizing <i>Applied Business Computing Concepts</i> chapters 10, 11, 12, 13, 14, 15, in-class lecture notes, and App Project notes.</p>			

## Appendix A: CIS 105 Overview

CIS 105 introduces students to information systems in business, and it includes significant content in the design and development of important decision support applications and personal productivity software tools that both support and reinforce excellent business problem solving and analysis skills.

All business students (except those enrolled in the Barrett Honors Program or the W. P. Carey Honors Academy program) are required to take CIS 105 because it establishes a baseline for the application of information systems, decision support systems and computer-based modeling and productivity tools in areas of business that students will study in more detail in follow-on core business courses. For example, finance core courses build on the modeling and decision support preparation from CIS 105 in application areas like dynamic cashflow analysis – as do accounting, supply chain management, procurement, marketing, etc. when they build on other assignments targeting problem solving in each respective domain. Course content and assignments are carefully designed to dovetail with advanced content in future core business courses. The business domain is rich in areas where problem solving necessarily involves decision support, conducting systems analysis and design efforts and decomposing and modeling problems in a manner that can provide insight and can support action.

The approach in CIS 105 is not to solely teach ‘point and click,’ but students will develop the base skillset. However, the overall approach is to leverage the tools where appropriate using difficult business domain-rich assignments (difficult for first year freshman business students) in order to prepare students for more complex issues that arise across the landscape of business domains. The material covered in Excel and Access do not appear on examinations in the course; we have opted to award 40% of the overall grade to the completion of hands-on assignments. Our rationale is that this hands-on use ensures thinking through model design and development beyond memorizing point and click solutions. An exemplary set of assignments is discussed herein –they are described using a common template that delineates both the basic skills and the critical thinking skills targeted. In addition, the templates show what kind of decisions the students need to make relative to the assignment. A learning systems tool-suite (<https://www.myeducator.com/reader/web/658/>) that works with Excel and Access is used to ensure students demonstrate mastery of applied concepts. Access assignments require students to think through information needs and discern what to extract from available to data in order to support decision making and business activities.

The course includes a culminating project where students establish requirements, design a mobile app to meet the requirements, they develop the app using a code generator consistent with a common information systems development methodology (e.g., they iterate through various design conventions), they establish a test plan up-front and they test the app. Further, they actually post the app to a well-known and open marketplace after making decisions on pricing, marketing, target audience, etc.

Course number: CIS 105

Logic and Reference Assignment (Excel)

Assignment Type: (Check one)

 Assignment Examination Project

Description: Logic and Reference. This is a three part assignment. Students construct the logical test to determine whether or not a situation warrants the invocation of the infield fly rule in baseball. A model is built to calculate prices to be charged and commissions to be paid taking into consideration volume price breaks and commission rate changes driven by varied performance thresholds. Data records in a table are analyzed to calculate various counts and sums and averages based upon various conditions in different fields

Coverage of Rudimentary Skills: Excel. Syntax and usage of IF statements and other conditional functions within Excel. Construction and syntax of Boolean logic used to construct the conditions within Excel IF statements. Syntax and Usage of VLOOKUP and HLOOKUP functions within Excel. Construction and usage of nested functions within Excel

Critical Thinking Learning Objectives: Students develop the ability to analyze a complex set of conditions expressed in English and translate them into algebraic expressions. Students appraise the effects of price breaks and various commission plans on a company's gross profit for a given sale. Students develop expressions that analyze records in a table, selecting those that meet complex conditions. They then summarize the data found in these aggregations of selected records.

Decisions/Actions Required: Deciding what algebraic tests should be applied in given situations to assess a set of business conditions. Deciding what price levels and commission strategies will support a company's profit objectives. Analyzing records to answer specific inquiries.

Course number: CIS 105

Modeling Assignment (Excel)

Assignment Type: (Check one)

 Assignment Examination Project

Description: Students create models addressing two problems. The first problem is to create a model to appraise a company's financing needs based on various estimated cash flows. The second problem is to create cost models for evaluating the relative costs of varied cell phone plans given a month's worth of call, text and data usage.

Coverage of Rudimentary Skills: Excel. Methods for enabling and using iterative techniques within Excel worksheets. Syntax and usage of Excel conditional function (IF), conditional mathematical functions (SUMIF, AVERAGEIF, etc.), and Boolean operators.

Critical Thinking Learning Objectives: Analyze how a company's revenues and expenses affect its cash position and financing requirements. Identify the interaction between interest rates and overall financing requirements. Analyze the interplay of fixed and variable costs within a cell phone cost plan. Use of conditional logic to differentiate different usages among different cost categories.

Decisions/Actions Required: Determine the total line of credit a company might need given a particular pattern of revenue, expenses and financing rates. Decide which cell phone plan is most attractive given a particular pattern of calls, text and data usage.

Course number: CIS105

Database Assignment

Assignment Type: (Check one)

 Assignment Examination Project

Description: A company has an existing database. The company wants to promote the use of its products for school fundraising efforts. A suitable file containing school names and contact numbers is found on the Internet and the data is added to the database. Forms and tables are added to the database to provide decision support for contact and follow-up activities.

Coverage of Rudimentary Skills: Access. Creation of tables within Access. Establishing relationship between tables in Access. Downloading and importing .txt files into an existing Access database. Creating forms in Access to enter data into and answer inquiries against these tables. Learning the rules within Access to validate data.

Critical Thinking Learning Objectives: Students will understand how to uniquely identify entities and the role of such unique identification in databases. They will understand the formulation of techniques for validating data in a database. They will learn how to seek out already available data and use the data in practical decision support applications.

Decisions/Actions Required: Decide what portions of data discovered are relevant to a given task. Decide what additional fields must be added to a new table to support a work flow for making and following up on contacts with potential customers. Decide what design elements should be in the table to properly validate the data collected during follow-up calls to potential customers.

Course number: CIS 105

## Database Query Assignment

Assignment Type: (Check one)

 Assignment Examination Project

Description: Database Queries. Using an existing database, students are to create and evaluate queries answering varied business-related questions.

Coverage of Rudimentary Skills: Construction of Select Queries within Access. Syntax and usage of conditional logic within Access. Use of varied Date functions within Access to define time ranges desired in a query. Construction and syntax of summary functions within queries.

Critical Thinking Learning Objectives: Given raw data in a database, students learn how to construct queries that provide answers to questions related to business performance. They need to debug queries that fail to provide the business insight needed to support business decisions.

Decisions/Actions Required: Queries provide answers to such questions as: Who are our customers? What are our sales during a particular time period? What are the most popular products? Which customers are buying a particular product? Students must interpret query results to assess if the query results are valid and truly relevant to the decisions that are being made. They must be able to defend the query results.



Required digital eBooks: Applied Business Computing Concepts (1 through 5) by McCarthy, ISBNs: 9780988635104, 9780988635111, 9780988635128, 9780988635135 and 9780988635142.

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  - **Chapter Two:** Inside the Computer
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    - Input Devices
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    - Memory Management and Storage
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    - Microsoft Windows® versus Mac OS®
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  - Ones and Zeros
  - Physical Storage Characteristics
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## CIS 105 – Computer Applications and Information Technology

Required Digital Applications eBook: Prometheus Series: Microsoft Excel and Access 2013

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