CSCI-A 106 TEST OUT/PLACEMENT EXAM PILOT
STUDY GUIDE

COMPUTER CONCEPTS (HIGH LEVEL TOPICS)

Reference Book: Technology in Action, Evans et al., Pearson https://www.pearson.com/us/higher-education/program/Evans-Technology-In-Action-Introductory-14th-Edition/PGM1240632.html

- *Computer Hardware and Safety: Understanding the Parts and Understanding and Assessing Hardware and Safely using a Computer*
  - o Understanding your computer, types of computers, input and output devices, motherboard, processor subsystem (CPU, performance, cores, hyper threading), memory subsystem (RAM, ROM, cache), storage subsystem (hard drive/magnetic media, cloud storage, optical drive/media, SSD, portable storage) and its internals, peripherals (ports, expansion cards, hubs), power controls, ergonomics, and optimize your system reliability.
- *System Software: The Operating System, Utility Programs, and File Management*
  - o What is an operating system, how it manages the computer hardware and software, how it interacts with users and other software, types of operating systems (personal, business, networks, and machines), virtual memory, how the boot process work, how files are managed, what utilities are and how they are used to manage and improve your computer performance, and accessibility technologies.
- *Application Software*
  - o What is application software, types of apps and software that you can use on your computing devices, productivity and business software, multimedia and educational software, and managing your software such as obtaining software, types of software licenses, compatibility and system requirements, and install and uninstall software.
- *Networking: Connecting Computing Devices, WWW, Internet*
  - o What is a network, network architecture by distance (PAN, LAN, HAN, MAN, and WAN) and administration (Client/Server, P2P) level, Ethernet protocols (wired vs. WiFi), transmission media, basic network hardware, network software, wired and broadband connections, wireless connections, installing and configuring home networks, and troubleshooting and securing wireless networks. Internet, how it works, collaborating and communication on the web, URLs (http vs. https, domains), navigating the web, using search engines effectively, ecommerce (B2B, B2C, C2C), intellectual property and cyberbullying.
- *Securing Your System: Protecting Your Digital Data and Devices, Privacy, Ethics*
  - o Hacking, viruses, online annoyances and threats, identity theft, social engineering, malware, adware, spyware, scareware, data safety & breaches, firewall, passwords/passphrases, biometrics, web surfing, phishing, computer ethics, cyber loafing, privacy, and protecting your computers physically.
- *Under the hood, Web 2.0, Digital lifestyle*
  - o Binary number system, decimal number system, binary and decimal conversions and vice versa, ASCII, UNICODE, bits and bytes, why binary, switches, vacuum tubes, transistors, CPU machine cycles, and CPU cache. Mobile computing, digital publishing, social networking, crowdsourcing, crowdfunding, crisis-mapping, collaborative consumption, digital divide, augmented reality, virtual reality, cognitive surplus, data mining, and computer forensics.

Reference Book: Exploring Microsoft Office 2016 Volume 1, Poatsy et al., Pearson
https://www.pearson.com/us/higher-education/program/Poatsy-Exploring-Microsoft-Office-2016-Volume-1/PGM214695.html

- *Word Processing (Word)*
    1. *Introduction to Word:* Creating and editing documents, customizing word, viewing documents in different ways, using features that improve readability (headers, footers, margins, page orientation, watermark, and symbols), modify document properties and prepare a document for distribution.
    2. *Document Presentation:* Text and paragraph formatting, document theme, work with sections, format text into columns, and inserting and formatting objects.
    3. *Document Productivity:* Create or Draw a Table, Insert and Delete Rows and Columns, Merge and Split Cells, Change Row Height and Column Width, Apply Table Styles, Adjust Table Position and Alignment, Format Table Text, Calculate Using Table Formulas and Functions, Use a Formula, Use a Function, Sort Data in a Table, Include a Recurring Table Header, Include Borders and Shading, Convert Text to a Table, Include a Table Caption, Select or Create a Recipient List, Use an Excel Worksheet as a Data Source, Use an Access Database Table as a Data Source, Sort and Filter Records in a Data Source, Insert Merge Fields, Merge a Main Document and a Data Source,
    4. *Collaboration and Research:* Select a Writing Style, Create a Source and Include a Citation, Create and Search for a Source, Create a Bibliography, Create and Modify Footnotes and Endnotes, Create a Table of Contents, Create an Index, Create a Cover Page, Use Markup, Add a Comment, Reply to Comments, Use Track Changes, Accept and Reject Changes, Share Documents, Collaborate on a Document, and Present a Document Online.

- *Spreadsheet Processing (Excel)*
    1. *Introduction to Excel:* Enter and Edit Cell Data, Create Formulas, Display Cell Formulas, Manage Columns and Rows, Manipulate Data, Apply Cell Styles, Alignment, and Font Options, Apply Number Formats, Manage Worksheets, Select Page Setup Options, and Preview and Print a Worksheet.
    2. *Formulas and Functions:* Use Relative, Absolute, and Mixed Cell References in Formulas, Insert a Function, Insert Basic Math and Statistics Functions, Use Date Functions, Determine Results with the IF Function, Use Lookup Functions, and Calculate Payments with the PMT Function.
    3. *Charts:* Select the Data Source, Choose a Chart Type, Move, Size, and Print a Chart, Add, Edit, and Format Chart Elements, Apply a Chart Style and Colors, Modify the Data Source, and Create and Customize Sparklines.
    4. *Datasets and Tables:* Freeze Rows and Columns, Print Large Datasets, Understanding the Benefits of Data Tables, Design and Create Tables, Apply a Table Style, Create Structured References in Formulas, Sort Data, Filter Data, Add a Total Row, and Apply Conditional Formatting and Create New Rules.

- *Database Processing (Access)*
  1. *Introduction to Access:* Open, Save, and Enable Content in a Database, Recognize Database Object Types, Modify Data in Table Datasheet View , Add Records to a Table, Delete Records from a Table, Use Database Utilities, Work with Filters, Perform Sorts, and Create a Database.
  2. *Tables and Queries in Relational Databases:* Design a Table (primary key, data types, fields), Create and Modify Tables and Work with Data, Share Data, Establish Table Relationships (foreign key), Create a Single-Table Query, Use the Query Wizard, Specify Query Criteria for Different Data Types, Understand Query Sort Order, Run, Copy, and Modify a Query, and Create and Modify a Multitable Query.

- *Presentation Software (PowerPoint)*
  1. *Creating a Basic Presentation:* Open and View a PowerPoint Presentation, Type a Speaker Note, Save as a PowerPoint Slide Show, Plan and Prepare a Presentation, Add Presentation Content, Review the Presentation, Add a Table, Insert Media Objects, Apply Transitions and Animations, Insert a Header and Footer, Navigate a Slide Show, and Print in PowerPoint
  2. *Presentation Development:* Create a Presentation Using a Template, Modify a Presentation Based on a Template, Create a Presentation in Outline View, Modify an Outline Structure, Print an Outline, Import an Outline, Reuse Slides From an Existing Presentation, Use Sections, Examine Slide Show Design Principles, Modify a Theme, and Modify the Slide Master.
  3. *Presentation Design:* Create Shapes, Apply Quick Styles and Customize Shapes, Create and Modify SmartArt and WordArt, and Modify and Arrange Objects.
  4. *Enhancing with Multimedia:* Insert a Picture, Transform a Picture, Use the Internet as a Resource, Add Video, Use Video Tools, Add Audio, Change Audio Settings, Create a Photo Album, and Set Photo Album Options.

For questions about test out/placement location, cost, scheduling, duration, etc.

- Read the Placement/Test Out Procedure document to schedule your appointment to take the test

Other questions?

- If you have more questions, please contact the CS department @ info@cs.iusb.edu or 574-520-5521