Diploma in

Computer Operating Systems & Network Technology

Course Summary IT Fundamentals

Program of Study: Diploma, Computer Operating Systems & Network Technology

Course Rubric/Title: CNT-1015 IT Fundamentals

Clock hours: 160

Prerequisite Course: N/A

Industry Certification: N/A

Course Description:

This course is designed to introduce students to basic digital literacy concepts, such as the binary number system, digital file formats, and the internet. It includes information on computer ethics, web browsers, social media, cloud computing, email, online safety and security, and evaluating online information. Students learn basic computer functions; such as file management, installing applications, networking, databases, computer programming, and information systems. The course will introduce them to common features of Microsoft Office applications. Finally, it will offer more detailed instruction in Microsoft Word, Excel, and PowerPoint.

Course Competencies:

1. Recall significant developments in the history of modern computing.
2. Identify uses of computers in today's world.
3. Describe the binary number system used by computers to process data.
4. Define bits and bytes.
5. Explain how physical signals are translated into digital information.
6. Describe how audio and video are stored digitally.
7. Distinguish between raster and vector images.
8. Select the best format for digital images.
9. Describe how RGB values determine pixel color.

10. Compare common image file types.
11. Describe ethical considerations related to evolving forms of technology.
12. Define the World Wide Web.
13. Describe the essential components of the Web, including websites, URLs, hyperlinks, web browsers, and search engines.
14. Identify technologies that use the Internet, including the Web, email, instant messaging, VoIP, and the Internet of Things.
15. Identify common web applications, including Webmail, Google Docs, Facebook, and YouTube.
16. Define and describe the use of cloud computing.
17. Define social media and describe its uses.
18. Recognize the risks and responsibilities of using social media.
19. Identify and appropriately respond to cyberbullying.
20. Describe the difference between downloading, live-streaming, and on-demand streaming.
21. Use a web browser to access the World Wide Web.
22. Use browser features such as private browsing, bookmarks, and downloading files.
23. Describe key browser and website features, including plug-ins, client-side scripting, certificates, caching, and proxy settings.
24. Make basic changes to browser settings.
25. Troubleshoot common browser problems.
26. Identify and describe various forms of electronic communication, including email, instant messaging, forums, text messaging, video chat, and social networking.
27. Download and install smartphone apps.
28. Send and receive SMS messages.
29. Identify popular mobile operating systems.
30. Explain the difference between WiFi and cellular-enabled Internet access.
31. Identify options for transferring digital photos from your smartphone to your PC.
32. Describe the basic features of popular web-based applications such as Gmail and Google Calendar.
33. Use Microsoft Outlook to format, send, and receive email.
34. Identify common rules of netiquette.
35. Explain how much privacy you can expect when using the Internet for social networking, file sharing, and financial transactions.
36. Explain how much privacy you can expect when using computers at work.
37. Configure Windows Firewall to different networks.
38. Evaluate email messages to determine if they represent a possible social engineering attack.
39. Safely spend money on the Internet.
40. Explain why it's important to back up data.
41. Describe the basics of data encryption.
42. Describe the importance of having a secure password.
43. Define different kinds of malware and know how to avoid them.
44. Clear a browser's cache.
45. Configure browser privacy and security features such as pop-up blockers, location tracking, and cookies.

46. Use advanced search to find information on the Internet.
47. Understand the implications of copyright and intellectual property laws for Internet use.
48. Define and describe uses of web pages, blogs, wikis, and podcasts.
49. Recognize primary, secondary, and tertiary sources, and describe the uses of each.
50. Scrutinize a source for potential bias or false information.
51. Know the difference between scholarly and consumer-level sources.
52. Identify common peripheral devices by sight.
53. Identify common ports and connectors by sight.
54. Connect cables and peripherals to a computer system.
55. Select appropriate hardware devices for particular scenarios.
56. Evaluate whether a computer system measures up to a list of minimum requirements.
57. Use the Settings app to view system information.
58. Identify and state the purpose of common hardware components.
59. Identify and describe different types of system software.
60. Identify common operating systems.
61. Identify and describe components of the Windows 10 operating system.
62. Change display settings in Windows.
63. Configure a screen saver through the Settings app.
64. Describe Windows printing features.
65. Connect a shared printer.
66. Configure a default printer.
67. Share a local printer with other users.
68. Configure Windows Update settings.
69. Backup and restore files.
70. Recognize and use utility software.
71. Create folders in the Windows file system.
72. Copy, rename, and delete files in Windows.
73. Copy files from the local Windows file system to OneDrive.
74. Connect a USB thumb drive to a desktop computer and copy files from the drive to your local file system.
75. Remove USB devices properly.
76. Share a Windows folder with other users and grant them specific access to files within the folder.
77. Use the Windows Recycle Bin.
78. Run Windows applications.
79. Pin applications to the Start Menu and the taskbar.
80. Unpin applications from the Start Menu and the taskbar.
81. Create application shortcuts on the Windows desktop.
82. Open and print a document from Microsoft Word.
83. Describe the advantages and disadvantages of different software installation methods.
84. Identify application software that facilitates collaboration, including discussion boards, screen sharing, calendaring, resource management, webinars, collaborative editing.
85. Define and state some advantages of computer networking.
86. Compare and contrast common Internet service types.

87. Describe the relationship between ISPs and the Internet.
88. Define the Internet and understand basic Internet protocols.
89. Explain the role of hosts and servers on a network.
90. Create a local account for a user who already has a Microsoft login.
91. Create a non-Microsoft user account.
92. Remove user accounts.
93. Connect to a public WiFi network.
94. Connect to a secure wireless network.
95. Identify and state the purpose of a relational database.
96. Define basic relational database terminology including, field, record, primary key, foreign key, and one-to-many relationship.
97. Explain what SQL is and interpret a basic SQL query.
98. Define the term Big Data and describe its related challenges and opportunities.
99. Use Microsoft Access to perform basic operations on database objects, including tables, forms, queries, and reports.
100. Explain what computer programming is and why it is useful.
101. Describe the difference between developing computer programs and using software packages.
102. Name several programming languages.
103. Compare and contrast different programming language categories.
104. Describe the purpose of programming logic, including branching and looping.
105. Analyze and understand pseudocode.
106. Describe several careers in computer science.
107. Identify and understand the purposes of HTML, CSS, and JavaScript in a web browser.
108. Describe the relationship between computer programming and artificial intelligence.
109. Explain the advantages of Object-Oriented Programming.
110. Create a simple Microsoft Excel macro using Visual Basic for Applications (VBA)
111. Describe the components of an information system.
112. Identify and describe the most important sectors of the ICT industry.
113. Conduct online research on a career that interests you in information technology.
114. Identify the traditional stages of the System Development Life Cycle (SDLC).
115. Describe modern alternatives to a linear process of systems analysis and design.
116. Compare and contrast different Microsoft Office versions, including Office 365, Office 2019, and Office Online.
117. Create a new blank file.
118. Save a file to the local computer.
119. Save a file remotely with OneDrive.
120. Save in alternate file formats.
121. Enable a downloaded file for editing.
122. Open an existing file.
123. Edit file properties.
124. Collapse and expand the Ribbon.
125. Change document views.
126. Use zoom.

127. Customize the Quick Access Toolbar.
128. Customize the Ribbon.
129. Split the window.
130. Configure documents to print.
131. Print sections of documents.
132. Set print scaling.
133. Change page setup options.
134. Print individual Excel worksheets.
135. Print handouts in PowerPoint.
136. Configure PowerPoint to print in grayscale.
137. Print speaker notes in PowerPoint.
138. Search for text within a document.
139. Insert hyperlinks.
140. Create bookmarks.
141. Use Go To and Find and Replace data.
142. Insert text boxes and images.
143. Format objects.
144. Create and format shapes.
145. Display gridlines.
146. Draw on a document by using digital ink.
147. Open a downloaded document and enable editing.
148. Navigate, enter, select, and delete text in a document.
149. Use Cut, Copy, and Paste.
150. Undo or redo an action.
151. Close a document.
152. Open a PDF for editing.
153. Insert text from an external source.
154. Reorganize the content in a document.
155. Paste text from a website into a Word document.
156. Bold, italicize, or underline a selection of text.
157. Format text in a document.
158. Align a paragraph to the left, right, or center of the page.
159. Show and hide formatting symbols.
160. Clear formatting within a selection.
161. Format and change paragraph settings.
162. Create a numbered list and modify list numbering options.
163. Create, format, and customize a bulleted list in a document.
164. Add a watermark to a page.
165. Add a page border.
166. Create and format multiple columns on a page.
167. Format tabs in a document.
168. Modify page margins.
169. Modify page orientation.
170. Insert a page break.

171. Align text vertically on a page.
172. Modify hyphenation options.
173. Add line numbers.
174. Format a report as a draft.
175. Format only part of a document into two columns.
176. Insert manual page breaks where needed in a document.
177. Find and replace a particular word within a document.
178. Turn automatic spelling and grammar checking on and off.
179. Use the spelling and grammar checker.
180. Use the thesaurus to find synonyms.
181. Count the total words in a document.
182. Use AutoCorrect features.
183. Insert illustrations and other elements into documents.
184. Create and format Tables in a document.
185. Use and modify Themes, Styles, and Templates.
186. Manage references in a document.
187. Insert, format and manage headers, footers, and sections.
188. Use Macros.
189. Create and manage Excel workbooks.
190. Organize and Enter data into a workbook.
191. Changing workbook properties and printing worksheets.
192. Format cells.
193. Enter simple formulas.
194. Use advanced functions.
195. Display worksheet data in charts.
196. Organize data in tables.
197. Summarize complex data.
198. Create and manage presentations.
199. Format textual content.
200. Design slides.
201. Utilize the slide master.
202. Format SmartArt and Shapes
203. Formatting Tables and Charts.
204. Formatting Pictures and Other Media.
205. Apply animations and transitions.
206. Deliver presentations.