Course Details

Course

CMGT/554 It Infrastructure (3 credits, Graduate) Scheduled

Program

MIS/BA-005 Master of Information Systems with a Graduate Business Analytics Certificate

Requirement

Required Course of Study: Information Systems Technology

Course Description

This course focuses on the managerial level of knowledge and terminology for telecommunications and computer networks. This course covers the concepts and application of the Internet, server and storage architectures, and regulatory considerations.

Topics and Objectives

**Data Communications and IT in the Business Environment**

* Apply data communications, networking models, and network standards to a business.
* Explain the role of Information technology in the business environment.
* Analyze the business manager’s role in the use of information systems and information technology.
* Explain the role of managing data to improve business performance.

**Networking Concepts**

* Identify open system interconnection (OSI) layers directly involved in data transmission within a business.
* Apply protocols to ensure accurate and timely data communication.

**Networking Models and Connectivity**

* Analyze networks used in a business environment.
* Create a 3-year organizational systems management plan incorporating current trends and security concerns.
* Evaluate the use of networking technologies and models used in the business environment.

**Organizational Applications and the Network**

* Evaluate software applications that utilize networking infrastructure.
* Analyze the usefulness of enterprise resource planning (ERP), customer relationship management (CRM), and big data analytic systems.
* Evaluate the effect of globalization on networking infrastructures within a business environment.

**The Web, Social Networking, and the Network**

* Evaluate the role of networking in e-commerce and e-business.
* Describe the effect of mobile computing on a network.
* Analyze how social networking impacts business and business networks.

**Business Intelligence, Security, and Technology Trends**

* Apply the measures that must be taken to secure a network.
* Evaluate IT metrics that can be used to improve efficiency and effectiveness.
* Evaluate current trends in technology for improving global business.

Additional Details

Location: Online

From: 05/10/2016 to 06/20/2016

Start Day: Tuesday

Instructor: DENIS BROOKER 

Attendance Status **?**

1 2 3 4 5 6

**Need Help? panel**

 panel content

**Academic Representative**

SHANNON CATT[Email SHANNON](mailto:Shannon.Catt@phoenix.edu)(602) 387-9826 ext #3879826

**Note:**This information is an estimate and is subject to change. Please refer to your Schedule and Credits for a detailed view of your degree progress, the [Academic Catalog](https://ecampus.phoenix.edu/Program/AcademicCatalog/Student) effective at the time of this course for the official course description, and the course syllabus for official course requirements and assignments.

# Familiarize yourself with the textbooks used in this course.

* TASK

Fitzgerald, J., Dennis, A., & Durcikova, A. (2012). Business data communications and networking(11th ed.). Hoboken, NJ: Wiley.

Laudon, K. C., & Laudon, J. P. (2014). Management information systems: Managing the digital firm(13th ed.).Upper Saddle River, NJ: Pearson Prentice Hall.

Turban, E., Volonino, L., & Wood, G. R. (2013). Information technology for management: Advancing sustainable, profitable business growth (9th ed.). Hoboken, NJ: Wiley.

**Course Software**

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| **College of Information Systems and Technology Course Software** | | | |
| [Computer requirements](http://www.phoenix.edu/students/how-it-works/online-resources/computer_requirements.html)   MAC users: Please note that there may be some instances where the required course software is not compatible with the   MAC OS. You will need to obtain access to a computer that is running Windows or on your MAC run Windows emulation   software such Parallels, VMware Fusion, Boot Camp or VirtualBox in order to access the software.        All courses use Internet Explorer and Microsoft® Office Suite — including Word, PowerPoint, and Excel.     NOTE: An enrolled student using the Adobe Creative Cloud subscription provided by Kivuto may request a new subscription   once the current subscription expires.        NOTE: We do NOT recommend using trial software versions because they expire. | | | |
| **Resources** | | | |
| [**College of Information System and Technology Resource Portal**](https://ecampus.phoenix.edu/secure/aapd/Materials/IP/curriculum/ist/Resources/index.asp) [**Programming Code Citation (Center for Writing Excellence)**](https://ecampus.phoenix.edu/secure/aapd/grammar/plagiarism/citations.asp)[**Programming Code Citation and Documentation Guidelines (PDF)**](https://ecampus.phoenix.edu/secure/aapd/CIST/Misc/UOPXProgrammingCodeCitationGuidelines.pdf) | | | |
| **Course Software** | | | |
| **Course** | **Software Title** | **Course Start  Date** | **Possible Software Sources** |
| **Associate / Undergraduate Courses** | | | |
| BSA/375 | Microsoft Project 2010 --AND-- Microsoft Visio 2010 --AND-- Microsoft Excel 2010 --AND-- Microsoft Word 2010 | 05/15/2015 | Virtual Desktop: Toolwire --OR-- [University of Phoenix Marketplace](https://phoenix.onthehub.com/WebStore/ProductsByMajorVersionList.aspx) --OR-- [Office 365](http://onthehub.com/microsoft-office-for-university-of-phoenix-students-and-faculty) --OR-- [Microsoft](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [JourneyEd](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [Lucidchart](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) |
| BSA/385 | Microsoft Visio  --OR-- Lucidchart | 03/04/2016 | Virtual Desktop: Toolwire --OR-- [University of Phoenix Marketplace](https://phoenix.onthehub.com/WebStore/ProductsByMajorVersionList.aspx) --OR-- [Office 365](http://onthehub.com/microsoft-office-for-university-of-phoenix-students-and-faculty) --OR-- [Microsoft](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [JourneyEd](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [Lucidchart](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) |
| BSA/411 | Microsoft Visio  --OR-- Lucidchart | 03/18/2016 | Virtual Desktop: Toolwire --OR-- [Office 365](http://onthehub.com/microsoft-office-for-university-of-phoenix-students-and-faculty) --OR-- [Microsoft](http://www.microsoftstore.com/store/msusa/en_US/pdp/productID.259323300?tid=sgtvoFc8o_dc&cid=5250&pcrid=21622929173&pkw=visio&pmt=e&WT.srch=1&WT.mc_id=pointitsem_Microsoft+US_google_5+-+Visio&WT.term=visio&WT.campaign=5+-+Visio&WT.content=gtvoFc8o&WT.source=google&WT.medium=cpc) --OR-- [JourneyEd](http://www.journeyed.com/product/search?qk_srch=Visio) --OR-- [Lucidchart](https://www.lucidchart.com/pages/education/students) |
| BSA/412 | Microsoft Visio  --OR-- Lucidchart  --AND-- Office365 | 03/18/2016 | Virtual Desktop: Toolwire --OR-- [Office 365](http://onthehub.com/microsoft-office-for-university-of-phoenix-students-and-faculty) --OR-- [Microsoft](http://www.microsoftstore.com/store/msusa/en_US/pdp/productID.259323300?tid=sgtvoFc8o_dc&cid=5250&pcrid=21622929173&pkw=visio&pmt=e&WT.srch=1&WT.mc_id=pointitsem_Microsoft+US_google_5+-+Visio&WT.term=visio&WT.campaign=5+-+Visio&WT.content=gtvoFc8o&WT.source=google&WT.medium=cpc) --OR-- [JourneyEd](http://www.journeyed.com/product/search?qk_srch=Visio) --OR-- [Lucidchart](https://www.lucidchart.com/pages/education/students) |
| CIS/105 | Microsoft Office365 | 04/01/2016 | [Office 365](http://onthehub.com/microsoft-office-for-university-of-phoenix-students-and-faculty) |
| CIS/211 | Microsoft Office365 | 02/19/2016 | [Office 365](http://onthehub.com/microsoft-office-for-university-of-phoenix-students-and-faculty) |
| CIS/298 | Microsoft Word --AND-- Microsoft Office365 --OR-- Microsoft Publisher --OR--  Lucidchart --OR-- Piktochart --OR-- Glogster | 03/18/2016 | [Office 365](http://onthehub.com/microsoft-office-for-university-of-phoenix-students-and-faculty) --OR-- [Lucidchart](https://www.lucidchart.com/pages/education/students) --OR-- [Piktochart](http://piktochart.com/) --OR-- [Glogster](http://edu.glogster.com/) |
| CIT/245 | Microsoft Visio  --OR-- Lucidchart | 12/04/2015 | Virtual Desktop: Toolwire --OR-- [Microsoft](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [JourneyEd](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [Lucidchart](https://www.lucidchart.com/pages/education/students) |
| CIT/249 | Microsoft Visio  --OR-- Lucidchart | 01/01/2016 | Virtual Desktop: Toolwire --OR-- [Microsoft](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [JourneyEd](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [Lucidchart](https://www.lucidchart.com/pages/education/students) |
| CIT/274 | Microsoft Visio  --OR-- Lucidchart | 01/01/2016 | Virtual Desktop: Toolwire --OR-- [Microsoft](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [JourneyEd](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [Lucidchart](https://www.lucidchart.com/pages/education/students) |
| CIT/276 | Microsoft Visio  --OR-- Lucidchart | 04/01/2016 | Virtual Desktop: Toolwire --OR-- [Microsoft](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [JourneyEd](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [Lucidchart](https://www.lucidchart.com/pages/education/students) |
| CMGT/410 | Microsoft Project 2013 | 10/09/2015 | Virtual Desktop: Toolwire--OR-- [University of Phoenix Marketplace](https://phoenix.onthehub.com/WebStore/ProductsByMajorVersionList.aspx) --OR-- [Microsoft](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [JourneyEd](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) |
| CMGT/413 | Office365 --AND-- Office Microsoft Project --AND-- Microsoft Visio --OR-- Lucidchart --AND-- Google Docs Program | 04/01/2016 | Virtual Desktop: Toolwire  --OR-- [Office 365](http://onthehub.com/microsoft-office-for-university-of-phoenix-students-and-faculty) --OR-- [Microsoft](http://www.microsoftstore.com/store/msusa/en_US/pdp/productID.259323300?tid=sgtvoFc8o_dc&cid=5250&pcrid=21622929173&pkw=visio&pmt=e&WT.srch=1&WT.mc_id=pointitsem_Microsoft+US_google_5+-+Visio&WT.term=visio&WT.campaign=5+-+Visio&WT.content=gtvoFc8o&WT.source=google&WT.medium=cpc) --OR-- [JourneyEd](http://www.journeyed.com/product/search?qk_srch=Visio) --OR-- [Lucidchart --AND-- Google Docs](https://www.google.com/docs/about/) |
| CMGT/420 | Microsoft Project | 03/18/2016 | Virtual Desktop: Toolwire |
| CMGT/431 | Microsoft Threat Model Tool 2014 | 03/18/2016 | [Microsoft Threat Model Tool 2014](https://www.microsoft.com/en-us/download/details.aspx?id=42518) |
| CMGT/432 | Microsoft Visio --OR-- Lucidchart | 04/01/2016 | Virtual Desktop: Toolwire  --OR-- [Microsoft](http://www.microsoftstore.com/store/msusa/en_US/pdp/productID.259323300?tid=sgtvoFc8o_dc&cid=5250&pcrid=21622929173&pkw=visio&pmt=e&WT.srch=1&WT.mc_id=pointitsem_Microsoft+US_google_5+-+Visio&WT.term=visio&WT.campaign=5+-+Visio&WT.content=gtvoFc8o&WT.source=google&WT.medium=cpc) --OR-- [JourneyEd](http://www.journeyed.com/product/search?qk_srch=Visio) --OR-- [Lucidchart](https://www.google.com/docs/about/) |
| CMGT/442 | Microsoft Office365 | 04/15/2016 | [Office 365](http://onthehub.com/microsoft-office-for-university-of-phoenix-students-and-faculty) |
| CMGT/445 | Java® SDK (JDK 8 current update) | 04/01/2016 | [http://java.sun.com](http://java.sun.com/javase/downloads/index.jsp) |
| COMM/218 | A web camera capable of video web conferencing and editing (Recommended) | 02/15/2012 | [http://www.journeyed.com](http://www.journeyed.com/home.asp) |
| DBM/261 | Microsoft Access | 08/15/2010 | Microsoft Office Professional |
| DBM/263 | Microsoft Access --AND-- Microsoft Visio --OR-- Lucidchart | 06/05/2015 | Toolwire: Personal Student Desktop --OR-- [University of Phoenix Marketplace](https://phoenix.onthehub.com/WebStore/ProductsByMajorVersionList.aspx) --AND-- [Office 365](http://onthehub.com/microsoft-office-for-university-of-phoenix-students-and-faculty) --OR-- [Microsoft](http://www.microsoftstore.com/store/msusa/en_US/pdp/productID.259323300?tid=sgtvoFc8o_dc&cid=5250&pcrid=21622929173&pkw=visio&pmt=e&WT.srch=1&WT.mc_id=pointitsem_Microsoft+US_google_5+-+Visio&WT.term=visio&WT.campaign=5+-+Visio&WT.content=gtvoFc8o&WT.source=google&WT.medium=cpc) --OR-- [JourneyEd](http://www.journeyed.com/product/search?qk_srch=Visio) --OR-- [Lucidchart](https://www.lucidchart.com/pages/education/students) |
| DBM/280 | Microsoft Access | 03/18/2016 | [Office 365](http://onthehub.com/microsoft-office-for-university-of-phoenix-students-and-faculty) |
| DBM/294 | Microsoft SQL Server 2012 | 04/01/2016 | Toolwire: Personal Student Desktop |
| DBM/296 | Microsoft SQL Server 2012 | 04/01/2016 | Toolwire: Personal Student Desktop |
| DBM/298 | Microsoft SQL Server 2012 | 04/01/2016 | Toolwire: Personal Student Desktop |
| DBM/380 | Microsoft SQL Server Express Edition --AND-- Oracle® Database 11g Express Edition  --AND--  Microsoft Access --AND-- Microsoft Visio --OR-- Lucidchart  **Note to faculty and students: students who do not have access to Oracle express should use My SQL as an alternative.** | 02/05/2016 | [SQL Server](http://www.microsoft.com/en-us/server-cloud/products/sql-server-editions/sql-server-express.aspx) --AND--  [Oracle Express](http://www.microsoft.com/en-us/server-cloud/products/sql-server-editions/sql-server-express.aspx) --AND--  [University of Phoenix Marketplace](https://phoenix.onthehub.com/WebStore/ProductsByMajorVersionList.aspx) --OR-- [Office 365](http://onthehub.com/microsoft-office-for-university-of-phoenix-students-and-faculty) --OR-- [Microsoft](http://www.microsoftstore.com/store/msusa/en_US/pdp/productID.259323300?tid=sgtvoFc8o_dc&cid=5250&pcrid=21622929173&pkw=visio&pmt=e&WT.srch=1&WT.mc_id=pointitsem_Microsoft+US_google_5+-+Visio&WT.term=visio&WT.campaign=5+-+Visio&WT.content=gtvoFc8o&WT.source=google&WT.medium=cpc) --OR-- [JourneyEd](http://www.journeyed.com/product/search?qk_srch=Visio) --OR-- [Lucidchart](https://www.lucidchart.com/pages/education/students) |
| DBM/384 | Microsoft SQL Server 2014 | 03/18/2016 | Virtual Desktop: Toolwire |
| DBM/460 | Microsoft SQL Server 2014 | 04/01/2016 | Virtual Desktop: Toolwire |
| HIT/450 | Microsoft Project --OR-- Microsoft Visio --OR-- Lucidchart | 04/01/2016 | Toolwire: Personal Student Desktop --OR-- [University of Phoenix Marketplace](https://phoenix.onthehub.com/WebStore/ProductsByMajorVersionList.aspx) --AND-- [Office 365](http://onthehub.com/microsoft-office-for-university-of-phoenix-students-and-faculty) --OR-- [Microsoft](http://www.microsoftstore.com/store/msusa/en_US/pdp/productID.259323300?tid=sgtvoFc8o_dc&cid=5250&pcrid=21622929173&pkw=visio&pmt=e&WT.srch=1&WT.mc_id=pointitsem_Microsoft+US_google_5+-+Visio&WT.term=visio&WT.campaign=5+-+Visio&WT.content=gtvoFc8o&WT.source=google&WT.medium=cpc) --OR-- [JourneyEd](http://www.journeyed.com/product/search?qk_srch=Visio) --OR-- [Lucidchart](https://www.lucidchart.com/pages/education/students) |
| IM/300 | Oracle Database Express --AND-- Microsoft Visio --OR-- Lucidchart | 03/18/2016 | Virtual Desktop: Toolwire --OR-- [Microsoft](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [JourneyEd](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [Lucidchart](https://www.lucidchart.com/pages/education/students) |
| IM/305 | Oracle Database Express --AND-- Microsoft Visio --OR-- Lucidchart | 04/01/2016 | Virtual Desktop: Toolwire --OR-- [Microsoft](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [JourneyEd](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [Lucidchart](https://www.lucidchart.com/pages/education/students) |
| IT/205 | Microsoft Office365 | 12/04/2015 | [Office365](http://onthehub.com/microsoft-office-for-university-of-phoenix-students-and-faculty) |
| IT/206 | Microsoft Office365 | 01/15/2016 | [Office365](http://onthehub.com/microsoft-office-for-university-of-phoenix-students-and-faculty) |
| IT/210 | Microsoft Visual Logic  **Note to faculty and students: MAC users: Please note that visual logic is not currently compatible on the MAC OS. You will need to obtain access to a computer that is running Windows or on your MAC run Windows emulation software such  Parallels, VMware Fusion,  Boot Camp or VirtualBox in order to access the Visual Logic software.** | 03/18/2016 | [uop.visuallogic.org](http://uop.visuallogic.org/) |
| IT/215 | Java SE Development Kit 8  — AND — NetBeans 8.0 and above | 04/01/2016 | [http://java.sun.com](http://www.oracle.com/technetwork/java/javase/downloads/index.html) [http://netbeans.org/](https://netbeans.org/) |
| IT/218 | Microsoft Visual Studio C++ 2013  Express Edition | 02/05/2016 | [Microsoft](https://www.microsoft.com/en-us/download/details.aspx?id=44914) |
| IT/235 | Adobe Dreamweaver CS6 | 04/01/2016 | Virtual Desktop: Toolwire --OR--  [Kivuto Adobe Creative Cloud](https://ecampus.phoenix.edu/content/material/materialhandler.aspx?contentTypeID=84)  [Kivuto Faculty Guide](https://ecampus.phoenix.edu/secure/aapd/CIST/Misc/Kivuto/uopx_kivuto_faculty_instructions_v1.docx)   [Kivuto Student Guide](https://ecampus.phoenix.edu/secure/aapd/CIST/Misc/Kivuto/uopx_kivuto_student_instructions_v1.docx) |
| IT/236 | Adobe Dreamweaver — AND — Microsoft Office365 | 04/01/2016 | IT/236 Week One — AND — [Office365](http://onthehub.com/microsoft-office-for-university-of-phoenix-students-and-faculty) |
| IT/237 | Adobe Dreamweaver CC | 04/01/2016 | IT/237 Week One |
| IT/238 | Adobe Dreamweaver --OR-- Microsoft Visual Web Developer  2010 Express Edition | 03/18/2016 | Virtual Desktop: Toolwire --OR--  [Kivuto Adobe Creative Cloud](https://ecampus.phoenix.edu/content/material/materialhandler.aspx?contentTypeID=84)  [Kivuto Faculty Guide](https://ecampus.phoenix.edu/secure/aapd/CIST/Misc/Kivuto/uopx_kivuto_faculty_instructions_v1.docx)   [Kivuto Student Guide](https://ecampus.phoenix.edu/secure/aapd/CIST/Misc/Kivuto/uopx_kivuto_student_instructions_v1.docx)  [Microsoft Visual Studio](http://www.microsoft.com/visualstudio/en-us/products/2010-editions/visual-web-developer-express) --OR-- [Visual Web Developer Express](https://msdn.microsoft.com/library/dd537667(v=vs.100).aspx) |
| IT/240 | Microsoft Office365 — AND — Microsoft Visio --OR-- Lucidchart | 01/15/2016 | [Office365](http://onthehub.com/microsoft-office-for-university-of-phoenix-students-and-faculty) — AND —  Virtual Desktop: Toolwire --OR-- [Microsoft](http://www.microsoftstore.com/store/msusa/en_US/pdp/productID.259323300?tid=sgtvoFc8o_dc&cid=5250&pcrid=21622929173&pkw=visio&pmt=e&WT.srch=1&WT.mc_id=pointitsem_Microsoft+US_google_5+-+Visio&WT.term=visio&WT.campaign=5+-+Visio&WT.content=gtvoFc8o&WT.source=google&WT.medium=cpc) --OR-- [JourneyEd](http://www.journeyed.com/product/search?qk_srch=Visio) --OR-- [Lucidchart](https://www.lucidchart.com/pages/education/students) |
| IT/260 | Microsoft Office365 — AND — Microsoft Access 2013 | 01/01/2016 | [Office365](http://onthehub.com/microsoft-office-for-university-of-phoenix-students-and-faculty) |
| IT/261 | Microsoft SQL Server 2012 | 04/01/2016 | Toolwire: Personal Student Desktop |
| IT/264 | Microsoft SQL Server 2012 | 01/01/2016 | Toolwire: Personal Student Desktop |
| MBL/400 | Adobe Dreamweaver CC | 04/01/2016 | MBL/400 Week One |
| MBL/402 | SDK ADT Bundle | 04/01/2016 | [Android SDK](http://developer.android.com/sdk/index.html) |
| MBL/404 | SDK ADT Bundle --AND-- Pencil Project  --AND-- Xcode® 6 or later Developer Software | 04/01/2016 | [Android SDK](http://developer.android.com/sdk/index.html) [Pencil Project](http://pencil.evolus.vn/Default.html) [Xcode](https://developer.apple.com/xcode/downloads/) |
| MBL/406 | Mac OS® operating system software 10.9 or later --AND-- Xcode® 7 Developer Software --AND-- Apple® Developer Program   **Note to faculty and students: Apple® iOS-based Mobile Programming Courses** You are required to have use of the following operating systems, applications, and membership for any Apple® iOS-based mobile programming courses: \* Mac OS® operating system software 10.9 or later required  \* Xcode® developer software, which should include the iOS SDK (free download) \* Required membership in the Apple® Developer Program to publish applications to Apple® mobile devices | 04/01/2016 | [Xcode](https://developer.apple.com/xcode/) [iOS Developer Program](https://developer.apple.com/programs/) |
| MBL/406 | Mac OS® operating system software 10.9 or later --AND-- Xcode® 7 Developer Software --AND-- Apple® Developer Program   **Note to faculty and students: Apple® iOS-based Mobile Programming Courses** You are required to have use of the following operating systems, applications, and membership for any Apple® iOS-based mobile programming courses: \* Mac OS® operating system software 10.9 or later required  \* Xcode® developer software, which should include the iOS SDK (free download) \* Required membership in the Apple® Developer Program to publish applications to Apple® mobile devices | 05/06/2016 | [Xcode](https://developer.apple.com/xcode/) [iOS Developer Program](https://developer.apple.com/programs/) |
| MBL/408 | Mac OS® operating system software 10.9 or later --AND-- Xcode® 7 Developer Software --AND-- Apple® Developer Program   **Note to faculty and students: Apple® iOS-based Mobile Programming Courses** You are required to have use of the following operating systems, applications, and membership for any Apple® iOS-based mobile programming courses: \* Mac OS® operating system software 10.9 or later required  \* Xcode® developer software, which should include the iOS SDK (free download) \* Required membership in the Apple® Developer Program to publish applications to Apple® mobile devices | 04/01/2016 | [Xcode](https://developer.apple.com/xcode/) [iOS Developer Program](https://developer.apple.com/programs/) |
| MBL/410 | Microsoft® Visual Studio® 2013   --OR-- Microsoft® Visual Studio® Express 2012 for Windows Phone 8 --AND--  Windows Phone SDK 8.0 | 04/01/2016 | [Visual Studio 2013](http://www.microsoftstore.com/store?Action=DisplayProductSearchResultsPage&Locale=en_US&SiteID=msusa&keywords=Microsoft%AE%20Visual%20Studio%AE%202013&sortby=score%20descending&filters=) [Microsoft® Visual Studio® Express 2012 for Windows Phone 8](https://msdn.microsoft.com/en-us/library/windows/apps/ff630878(v=vs.105).aspx) [Windows Phone SDK 8.0](https://www.microsoft.com/en-us/download/details.aspx?id=35471) |
| MBL/412 | Microsoft® Visual Studio® 2013  --OR-- Microsoft® Visual Studio® Express 2012 for Windows Phone 8 --AND-- Windows® Phone SDK 8 | 04/01/2016 | [Visual Studio 2013](http://www.microsoftstore.com/store?Action=DisplayProductSearchResultsPage&Locale=en_US&SiteID=msusa&keywords=Microsoft%AE%20Visual%20Studio%AE%202013&sortby=score%20descending&filters=)[Microsoft® Visual Studio® Express 2012 for Windows Phone 8](https://msdn.microsoft.com/en-us/library/windows/apps/ff630878(v=vs.105).aspx) [Windows® Phone SDK 8](http://www.microsoft.com/en-us/download/details.aspx?id=35471) |
| NTC/300 | Microsoft Visio  --OR-- Lucidchart  --AND-- Office365 | 04/01/2016 | [Microsoft](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [JourneyEd](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [Lucidchart --AND-- Office 365](https://www.lucidchart.com/pages/education/students) |
| NTC/302 | Microsoft Visio  --OR-- Lucidchart | 04/01/2016 | Virtual Desktop: Toolwire --OR-- [Microsoft](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [JourneyEd](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [Lucidchart](https://www.lucidchart.com/pages/education/students) |
| NTC/320 | Microsoft Visio  --OR-- Lucidchart | 04/01/2016 | Virtual Desktop: Toolwire --OR-- [Microsoft](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [JourneyEd](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [Lucidchart](https://www.lucidchart.com/pages/education/students) |
| NTC/324 | Microsoft Visio  --OR-- Lucidchart --AND-- Windows Server 2012 --AND-- Office365 --AND-- Microsoft Internet Explorer on Microsoft Windows, with administrative permission to install ActiveX controls | 04/01/2016 | Virtual Desktop: Toolwire--OR--[Office 365](http://onthehub.com/microsoft-office-for-university-of-phoenix-students-and-faculty) --OR-- [Microsoft](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [JourneyEd](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [Lucidchart](https://www.lucidchart.com/pages/education/students)  --AND- [Windows Server 2012](http://www.microsoft.com/en-us/server-cloud/products/windows-server-2012-r2/)  A Microsoft acccount is required (available through an Office 365 subscription). |
| NTC/326 | Microsoft Visio  --OR-- Lucidchart --AND-- Windows Server 2012 --AND-- Office365 --AND-- Microsoft Internet Explorer on Microsoft Windows, with administrative permission to install ActiveX controls | 04/01/2016 | [Office 365](http://onthehub.com/microsoft-office-for-university-of-phoenix-students-and-faculty) --OR-- [Microsoft](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [JourneyEd](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [Lucidchart](https://www.lucidchart.com/pages/education/students)  --AND- [Windows Server 2012](http://www.microsoft.com/en-us/server-cloud/products/windows-server-2012-r2/)  A Microsoft acccount is required (available through an Office 365 subscription). |
| NTC/328 | Microsoft Visio  --OR-- Lucidchart --AND-- Windows Server 2012 --AND-- Office365 --AND-- Microsoft Internet Explorer on Microsoft Windows, with administrative permission to install ActiveX controls | 04/01/2016 | Virtual Desktop: Toolwire--OR--[Office 365](http://onthehub.com/microsoft-office-for-university-of-phoenix-students-and-faculty) --OR-- [Microsoft](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [JourneyEd](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [Lucidchart](https://www.lucidchart.com/pages/education/students)  --AND- [Windows Server 2012](http://www.microsoft.com/en-us/server-cloud/products/windows-server-2012-r2/)  A Microsoft acccount is required (available through an Office 365 subscription). |
| NTC/362 | Microsoft Visio  --OR-- Lucidchart | 04/01/2016 | Virtual Desktop: Toolwire --OR-- [Microsoft](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [JourneyEd](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [Lucidchart](https://www.lucidchart.com/pages/education/students) |
| NTC/405 | Microsoft Visio  --OR-- Lucidchart | 03/04/2016 | Virtual Desktop: Toolwire --OR-- [Microsoft](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [JourneyEd](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [Lucidchart](https://www.lucidchart.com/pages/education/students) |
| NTC/409 | NMap.org — AND — Microsoft Visio  --OR-- Lucidchart | 12/04/2015 | [NMap.org](https://nmap.org/) — AND — [Microsoft](http://www.microsoftstore.com/store/msusa/en_US/pdp/productID.259323300?tid=sgtvoFc8o_dc&cid=5250&pcrid=21622929173&pkw=visio&pmt=e&WT.srch=1&WT.mc_id=pointitsem_Microsoft+US_google_5+-+Visio&WT.term=visio&WT.campaign=5+-+Visio&WT.content=gtvoFc8o&WT.source=google&WT.medium=cpc) --OR-- [JourneyEd](http://www.journeyed.com/product/search?qk_srch=Visio) --OR-- [Lucidchart](https://www.lucidchart.com/pages/education/students) |
| NTC/409 | Microsoft Visio  --OR-- Lucidchart | 04/01/2016 | [Microsoft](http://www.microsoftstore.com/store/msusa/en_US/pdp/productID.259323300?tid=sgtvoFc8o_dc&cid=5250&pcrid=21622929173&pkw=visio&pmt=e&WT.srch=1&WT.mc_id=pointitsem_Microsoft+US_google_5+-+Visio&WT.term=visio&WT.campaign=5+-+Visio&WT.content=gtvoFc8o&WT.source=google&WT.medium=cpc) --OR-- [JourneyEd](http://www.journeyed.com/product/search?qk_srch=Visio) --OR-- [Lucidchart](https://www.lucidchart.com/pages/education/students) |
| NTC/411 | Microsoft Visio  --OR-- Lucidchart | 04/01/2016 | [Microsoft](http://www.microsoftstore.com/store/msusa/en_US/pdp/productID.259323300?tid=sgtvoFc8o_dc&cid=5250&pcrid=21622929173&pkw=visio&pmt=e&WT.srch=1&WT.mc_id=pointitsem_Microsoft+US_google_5+-+Visio&WT.term=visio&WT.campaign=5+-+Visio&WT.content=gtvoFc8o&WT.source=google&WT.medium=cpc) --OR-- [JourneyEd](http://www.journeyed.com/product/search?qk_srch=Visio) --OR-- [Lucidchart](https://www.lucidchart.com/pages/education/students) |
| NTC/415 | Microsoft Visio  --OR-- Lucidchart | 04/01/2016 | [Microsoft](http://www.microsoftstore.com/store/msusa/en_US/pdp/productID.259323300?tid=sgtvoFc8o_dc&cid=5250&pcrid=21622929173&pkw=visio&pmt=e&WT.srch=1&WT.mc_id=pointitsem_Microsoft+US_google_5+-+Visio&WT.term=visio&WT.campaign=5+-+Visio&WT.content=gtvoFc8o&WT.source=google&WT.medium=cpc) --OR-- [JourneyEd](http://www.journeyed.com/product/search?qk_srch=Visio) --OR-- [Lucidchart](https://www.lucidchart.com/pages/education/students) |
| POS/371 | Alice | 07/15/2010 | POS/371 Course Materials page |
| POS/408 | Microsoft Visual Studio Professional 2012 --OR-- Microsoft Visual Studio Express 2012 for Windows Desktop --OR-- Microsoft Visual Studio Professional 2013  --OR-- Microsoft Visual Studio Express 2013 for Windows Desktop | 09/01/2014 | [Visual Studio](http://www.visualstudio.com/downloads/download-visual-studio-vs) --OR-- [Microsoft DreamSpark Visual Studio Professional 2012](https://www.dreamspark.com/Product/Product.aspx?ProductId=44) |
| POS/409 | Microsoft Visual Studio Professional 2012  --OR-- Microsoft Visual Studio Express 2012 for Windows Desktop  --OR-- Microsoft Visual Studio Professional 2013  --OR-- Microsoft Visual Studio Express 2013 for Windows Desktop | 12/1/2014 | [Visual Studio](http://www.visualstudio.com/downloads/download-visual-studio-vs) --OR-- [Microsoft DreamSpark Visual Studio Professional 2012](https://www.dreamspark.com/Product/Product.aspx?ProductId=44) |
| POS/410 | Microsoft SQL Server 2012 | 04/01/2016 | Virtual Desktop: Toolwire |
| POS/420 | Red Hat Enterprise Linux 6 | 11/01/2012 | Virtual Desktop: Toolwire |
| POS/422 | Red Hat Enterprise Linux 6 | 01/15/2013 | Virtual Desktop: Toolwire |
| POS/433 | Red Hat Enterprise Linux 6 | 03/18/2016 | Virtual Desktop: Toolwire |
| PRG/211 | Microsoft Visual Logic  **Note to faculty and students: MAC users: Please note that visual logic is not currently compatible on the MAC OS. You will need to obtain access to a computer that is running Windows or on your MAC run Windows emulation software such  Parallels, VMware Fusion,  Boot Camp or VirtualBox in order to access the Visual Logic software.** | 07/01/2014 | [uop.visuallogic.org](http://uop.visuallogic.org/) |
| PRG/215 | Java SE Development Kit 8  — AND — NetBeans 8.0 and above | 09/04/2015 | [http://java.sun.com](http://www.oracle.com/technetwork/java/javase/downloads/index.html) [http://netbeans.org/](https://netbeans.org/) |
| PRG/218 | Microsoft® Visual Studio® Express | 04/01/2016 | [Visual Studio](https://www.visualstudio.com/products/mt238358) |
| PRG/280 | Notepad++ 6.8 or later | 12/18/2015 | [Notepad++](https://notepad-plus-plus.org/download/v6.8.html) |
| PRG/281 | Notepad++ 6.8 or later | 03/18/2016 | [Notepad++](https://notepad-plus-plus.org/download/v6.8.html) |
| PRG/282 | Microsoft Visual Studio Express 2012 for Windows Desktop --OR-- Microsoft Visual Studio Express 2013 for Windows Desktop  --OR-- Microsoft Visual Studio Express 2015 RC for Windows Desktop --AND--  Noetpad++ 6.8 or later | 03/18/2016 | [Microsoft Download Center](http://www.microsoft.com/en-us/download/details.aspx?id=40769) --OR-- [Visual Studio](http://www.visualstudio.com/en-us/downloads/download-visual-studio-vs?CR_CC=200323803) --AND--  [Notepad++](https://notepad-plus-plus.org/download/v6.8.html) |
| PRG/410 | Microsoft Visual Studio Express 2012 for Windows Desktop --OR-- Microsoft Visual Studio Express 2013 for Windows Desktop | 04/01/2016 | [Microsoft Download Center](http://www.microsoft.com/en-us/download/details.aspx?id=34673) --OR-- [Visual Studio](http://www.visualstudio.com/en-us/downloads/download-visual-studio-vs?CR_CC=200323803) |
| PRG/411 | C++ Programming II | 08/15/2010 | [http://www.journeyed.com](http://www.journeyed.com/home.asp) |
| PRG/420 | Java® JDK (JDK 8 current update) — AND — NetBeans (JDK 8 current update) | 10/02/2015 | [http://java.sun.com](http://www.oracle.com/technetwork/java/javase/downloads/index.html) |
| PRG/421 | Java® JDK (JDK 8 current update) — AND — Java® DB — AND — NetBeans (JDK 8 current update) | 02/19/2016 | [http://java.sun.com](http://www.oracle.com/technetwork/java/javase/downloads/index.html) |
| VCT/221 | Adobe Flash Creative Cloud | 08/07/2015 | [Kivuto Adobe Creative Cloud](https://ecampus.phoenix.edu/content/material/materialhandler.aspx?contentTypeID=84)  [Kivuto Faculty Guide](https://ecampus.phoenix.edu/secure/aapd/CIST/Misc/Kivuto/uopx_kivuto_faculty_instructions_v1.docx)   [Kivuto Student Guide](https://ecampus.phoenix.edu/secure/aapd/CIST/Misc/Kivuto/uopx_kivuto_student_instructions_v1.docx) |
| VCT/231 | Adobe PremierePro Creative Cloud | 02/19/2016 | VCT/231 Week One |
| VCT/236 | Adobe Photoshop Creative Cloud | 04/01/2016 | VCT/236 Week One |
| VCT/241 | Adobe InDesign Creative Cloud | 04/01/2016 | VCT/241 Week One |
| VCT/251 | Adobe Illustrator Creative Cloud | 04/01/2016 | VCT/251 Week One |
| VCT/345 | Adobe Illustrator Creative Cloud | 02/19/2016 | [Kivuto Adobe Creative Cloud](https://ecampus.phoenix.edu/content/material/materialhandler.aspx?contentTypeID=84)  [Kivuto Faculty Guide](https://ecampus.phoenix.edu/secure/aapd/CIST/Misc/Kivuto/uopx_kivuto_faculty_instructions_v1.docx)   [Kivuto Student Guide](https://ecampus.phoenix.edu/secure/aapd/CIST/Misc/Kivuto/uopx_kivuto_student_instructions_v1.docx) |
| VCT/305 | Adobe Muse CC  --AND-- Adobe Illustrator CC | 04/01/2016 | VCT/305 Week One |
| VCT/315 | Autodesk® 3ds Max® 2015 | 03/18/2016 | [Autodesk 3ds Max 2015](http://www.autodesk.com/education/free-software/3ds-max) |
| VCT/330 | Adobe Photoshop CC  --AND-- Adobe Bridge CC | 10/15/2014 | [Kivuto Adobe Creative Cloud](https://ecampus.phoenix.edu/content/material/materialhandler.aspx?contentTypeID=84)  [Kivuto Faculty Guide](https://ecampus.phoenix.edu/secure/aapd/CIST/Misc/Kivuto/uopx_kivuto_faculty_instructions_v1.docx)   [Kivuto Student Guide](https://ecampus.phoenix.edu/secure/aapd/CIST/Misc/Kivuto/uopx_kivuto_student_instructions_v1.docx) |
| VCT/330 | Adobe Photoshop CC  --AND-- Adobe Bridge CC | 04/01/2016 | VCT/330 Week One |
| VCT/335 | Adobe Photoshop Creative Cloud Autodesk 123D Autodesk Inventor Autodesk 123D Catch  Autodesk 3D Printing Partners | 04/01/2016 | [VCT/335](http://www.123dapp.com/design)Week One [Autodesk 123D](http://www.123dapp.com/design) [Autodesk 3D Printing Partners](http://www.123dapp.com/3d-printing-services) |
| VCT/340 | Adobe Dreamweaver CC --AND-- Adobe Bridge CC | 12/04/2015 | VCT/340 Week One |
| VCT/345 | Adobe Illustrator CC | 07/03/2015 | [Kivuto Adobe Creative Cloud](https://ecampus.phoenix.edu/content/material/materialhandler.aspx?contentTypeID=84)  [Kivuto Faculty Guide](https://ecampus.phoenix.edu/secure/aapd/CIST/Misc/Kivuto/uopx_kivuto_faculty_instructions_v1.docx)   [Kivuto Student Guide](https://ecampus.phoenix.edu/secure/aapd/CIST/Misc/Kivuto/uopx_kivuto_student_instructions_v1.docx) |
| VCT/350 | Adobe Acrobat XI Pro --AND-- Microsoft Excel | 03/18/2016 | Virtual Desktop: Toolwire --OR--  [Kivuto Adobe Creative Cloud](https://ecampus.phoenix.edu/content/material/materialhandler.aspx?contentTypeID=84)  [Kivuto Faculty Guide](https://ecampus.phoenix.edu/secure/aapd/CIST/Misc/Kivuto/uopx_kivuto_faculty_instructions_v1.docx)   [Kivuto Student Guide](https://ecampus.phoenix.edu/secure/aapd/CIST/Misc/Kivuto/uopx_kivuto_student_instructions_v1.docx) |
| VCT/360 | Adobe InDesign --AND-- Adobe Bridge | 09/01/2013 | VCT/360 Week One |
| VCT/370 | Adobe Flash Professional CS6 | 09/01/2013 | Virtual Desktop: Toolwire --OR--  [Kivuto Adobe Creative Cloud](https://ecampus.phoenix.edu/content/material/materialhandler.aspx?contentTypeID=84)  [Kivuto Faculty Guide](https://ecampus.phoenix.edu/secure/aapd/CIST/Misc/Kivuto/uopx_kivuto_faculty_instructions_v1.docx)   [Kivuto Student Guide](https://ecampus.phoenix.edu/secure/aapd/CIST/Misc/Kivuto/uopx_kivuto_student_instructions_v1.docx) |
| VCT/380 | Adobe Photoshop CC --AND-- Lightroom CC | 04/01/2016 | VCT/380 Week One |
| VCT/390 | Adobe Premiere Pro | 04/01/2016 | VCT/390 Week One |
| WEB/236 | Adobe Dreamweaver Creative Cloud --AND-- Google Drive | 07/03/2015 | WEB/236 Week One --AND-- [Google Drive](https://www.google.com/drive/download/) |
| WEB/240 | Adobe Dreamweaver Creative Cloud | 03/18/2016 | WEB/240 Week One --AND-- [Google Drive](https://www.google.com/drive/download/) |
| WEB/401 | Adobe Dreamweaver Creative Cloud  --AND--  Microsoft Visual Studio 2010 Express  --AND--  SQL Server 2008  --AND--  Microsoft IIS Manager  --AND--  Microsoft Visio 2010  --AND--  Internet Explorer | 02/05/2016 | WEB/401 Week One  --AND-- Virtual Desktop: Toolwire |
| WEB/407 | Adobe Dreamweaver Creative Cloud | 03/18/2016 | WEB/407 Week One |
| WEB/436 | Adobe Dreamweaver CC | 04/01/2016 | WEB/436 Week One |
| WEB/437 | Adobe Dreamweaver CC --AND-- Microsoft Office365 | 04/01/2016 | WEB/437 Week One--AND-- [Office 365](http://onthehub.com/microsoft-office-for-university-of-phoenix-students-and-faculty) |
| **Graduate Courses** | | | |
| BSA/510 | Microsoft Visio 2013 Microsoft Excel 2013 | 05/06/2016 | Virtual desktop: Toolwire |
| BSA/515 | Microsoft Office365 — AND — Microsoft Project 2013  — AND — Microsoft Visio --OR-- Lucidchart | 04/01/2016 | Virtual desktop: Toolwire --OR-- [Microsoft](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [JourneyEd](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [Lucidchart](https://www.lucidchart.com/pages/education/students) |
| BSA/520 | Office365 | 03/04/2016 | [Office 365](http://onthehub.com/microsoft-office-for-university-of-phoenix-students-and-faculty) |
| BSA/530 | Microsoft Visio --OR-- Lucidchart | 05/06/2016 | Virtual desktop: Toolwire --OR-- [Microsoft](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [JourneyEd](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [Lucidchart](https://www.lucidchart.com/pages/education/students) |
| BSA/540 | Microsoft Access 2013 Microsoft Visio 2013 | 03/18/2016 | Virtual desktop: Toolwire |
| BSA/545 | Microsoft Visio  --OR-- Lucidchart | 03/18/2016 | Virtual Desktop: Toolwire --OR-- [Microsoft](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [JourneyEd](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [Lucidchart](https://www.lucidchart.com/pages/education/students) |
| BSA/550 | Microsoft Visio --OR-- Lucidchart --AND-- Office365 | 04/01/2016 | Virtual desktop: Toolwire --OR-- [Microsoft](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [JourneyEd](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [Lucidchart](https://www.lucidchart.com/pages/education/students)  --AND-- [Office 365](http://onthehub.com/microsoft-office-for-university-of-phoenix-students-and-faculty) |
| BSA/570 | SAS® Studio Software --AND-- Office365 | 12/18/2015 | [SAS® Studio Software](https://support.sas.com/ctx3/sodareg/index.html) [SAS® Studio Software Registration and Installation](http://support.sas.com/ondemand/manuals/SASStudio.pdf) --AND-- [Office 365](http://onthehub.com/microsoft-office-for-university-of-phoenix-students-and-faculty) |
| BSA/580 | SAS® Studio Software | 04/01/2016 | BSA/580 Course Materials page |
| CIT/581 | Adobe® Captivate 9 --AND-- Microsoft® Sway --AND-- Office365 | 04/01/2016 | CIT/581 Week One--AND-- [Sway](https://sway.com/) [--AND-- Office 365](http://onthehub.com/microsoft-office-for-university-of-phoenix-students-and-faculty) |
| CMGT/555 | Microsoft Visio 2013 | 03/18/2016 | Virtual desktop: Toolwire |
| CMGT/575 | Microsoft Project 2013 | 02/05/2016 | Virtual desktop: Toolwire |
| CSS/562 | Java SDK (JDK 8 current update)  --AND--  NetBeans (IDE 8 current update) with JUnit | 02/19/2016 | [Java SDK](http://www.oracle.com/technetwork/java/javase/downloads/index.html) [NetBeans](https://netbeans.org/) |
| DBM/500 | Microsoft Access   --AND--   Microsoft Visio (Recommended)  --AND--  Microsoft Project (Recommended) | 04/01/2010 | Microsoft Office Professional --OR-- [University of Phoenix Marketplace](https://phoenix.onthehub.com/WebStore/ProductsByMajorVersionList.aspx) --AND-- [Office 365](http://onthehub.com/microsoft-office-for-university-of-phoenix-students-and-faculty) --OR-- [Microsoft](http://www.microsoftstore.com/store/msusa/en_US/pdp/productID.259323300?tid=sgtvoFc8o_dc&cid=5250&pcrid=21622929173&pkw=visio&pmt=e&WT.srch=1&WT.mc_id=pointitsem_Microsoft+US_google_5+-+Visio&WT.term=visio&WT.campaign=5+-+Visio&WT.content=gtvoFc8o&WT.source=google&WT.medium=cpc) --OR-- [JourneyEd](http://www.journeyed.com/product/search?qk_srch=Visio) --OR-- [Lucidchart](https://www.lucidchart.com/pages/education/students) |
| DBM/502 | Microsoft Visio  --OR-- Lucidchart | 04/01/2016 | Virtual Desktop: Toolwire --OR-- [Microsoft](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [JourneyEd](http://office.microsoft.com/en-us/visio/microsoft-visio-pro-for-office-365-create-versatile-diagrams-FX103791920.aspx) --OR-- [Lucidchart](https://www.lucidchart.com/pages/education/students) |
| Note: Software may be obtained at significant discounts at the following sites:  [Microsoft DreamSpark](https://www.dreamspark.com/)  [ACM Student Members MSDN Academic Alliance Program](http://www.acm.org/membership/student/msdnaa-faq#available_titles)   [JourneyEd](http://www.journeyed.com/?uumc=495573&utm_source=search&utm_medium=paidsearch&sissr=1)   [Adobe Education](http://www.adobe.com/education/students.edu.html?showEduReq=no)  [Adobe Certification Marketplace (discounts available)](https://www.adobemarketplace.com/SearchResults.asp?Cat=1907) | | | |
| NOTE: We do NOT recommend using trial software versions because they expire. | | | |

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# College of IS&T Resources

<https://ecampus.phoenix.edu/secure/aapd/Materials/IP/curriculum/ist/Resources/index.asp#0>

# College of IS&T Website

<https://ecampus.phoenix.edu/secure/aapd/CIST/ISTWeb/FacWeb/Index.html>

# Virtual Organizations

<https://ecampus.phoenix.edu/secure/aapd/cist/vop/index.html>