Management Information Systems and Business Data Processing, Classification of Instructional Program (CIP) 52.1201

Units of Instruction and Task Grid Linked to Pennsylvania Core Standards

100 Safety

Secondary Competency Task Grid with Unit and Task Numbers	Common Career Technical Core Standards	Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5	Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6	Pennsylvania Core Standards for Mathematics Standard 2.1
101 Follow current ergonomic best practices for health, safety and productivity. **102** Organize and maintain a workstation. **103** Describe and demonstrate ways to dissipate electrostatic discharge and related risks.	**Refer to the end of this document for an explanation of the following standards and sample indicators:** STANDARDS: INFORMATION TECHNOLOGY IT 01 IT 11 INFORMATION SUPPORT SERVICES IT-SUP 01 IT-SUP 02 IT-SUP 03 IT-SUP 04 IT-SUP 05 IT-SUP 06 IT-SUP 07 IT-SUP 08 IT-SUP 09 IT-SUP 10	**KEY IDEAS/DETAILS** ***GRADES 9-10*** Standard PCS.3.5.9-10.A Standard PCS.3.5.9-10.B Standard PCS.3.5.9-10.C ***GRADES 11-12*** Standard PCS.3.5.11-12A Standard PCS.3.5.11-12.B Standard PCS.3.5.11-12.C **CRAFT AND STRUCTURE** ***GRADES 9-10*** Standard PCS.3.5.9-10.D Standard PCS.3.5.9-10.E Standard PCS.3.5.9-10.F ***GRADES 11-12*** Standard PCS.3.5.11-12.D Standard PCS.3.5.11-12.E Standard PCS.3.5.11-12.F **INTEGRATE KNOWLEDGE/ IDEAS** ***GRADES 9-10*** Standard PCS.3.5.9-10.G Standard PCS.3.5.9-10.H	**TEXT TYPES/ PURPOSE** ***GRADES 9-10*** Standard PCS.3.6.9-10.A Standard PCS.3.6.9-10.B ***GRADES 11-12*** Standard PCS.3.6.11-12.A Standard PCS.3.6.11-12.B **PRODUCTION AND DISTRIBUTION OF WRITING** ***GRADES 9-10*** Standard PCS.3.6.9-10.C Standard PCS.3.6.9-10 D Standard PCS.3.6.9-10.E ***GRADES 11-12*** Standard PCS.3.6.11-12 C Standard.PCS.3.6.11-12.D Standard PCS.3.6.11- 12 E **RESEARCH** ***GRADES 9-10*** Standard PCS.3.6.9-10.F Standard PCS.3.6.9-10.G Standard PCS.3.6.9-10.H ***GRADES 11-12***	

Secondary Competency Task Grid with Unit and Task Numbers	Common Career Technical Core Standards	Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5	Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6	Pennsylvania Core Standards for Mathematics Standard 2.1
		Standard PCS.3.5.9-10.I **GRADES 9-12** Standard PCS.3.5.11-12.G Standard PCS.3.5.11-12.H Standard PCS.3.5.11-12.I	Standard PCS.3.6.11-12.F Standard PCS.3.6.11-12.G Standard PCS.3.6.11-12.H **RANGE OF WRITING** **GRADES 9-10** Standard PCS.3.5.9-10.I **GRADES 11-12** Standard CC.3.5.11-12.I	

200 Professional Business Procedures

Secondary Competency Task Grid with Unit and Task Numbers	Common Career Technical Core Standards	Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5	Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6	Pennsylvania Core Standards for Mathematics Standard 2.1
201 Demonstrate proper multimedia and telecommunications etiquette. **202** Identify, proofread, and correct grammar errors in all documents. **203** Demonstrate and implement professional interpersonal communication skills. **204** Develop time management skills by prioritizing and multitasking. **205** Utilize business correspondence and write technical documents. **206** Describe the advantages of client service in building a loyal client base. **207** Identify client needs and build rapport with business professionals, being mindful of cultural differences. **208** Develop and perform conflict resolution practices. **209** Utilize multimedia presentation software for professional communication. **210** Design and publish documents using appropriate software. **211** Edit a document using word processing software.	Refer to the end of this document for an explanation of the following standards and sample indicators: STANDARDS INFORMATION TECHNOLOGY IT 01 IT 02 IT 03 IT 04 IT 06 IT 07 IT 10 IT 11 INFORMATION SUPPORT SERVICES IT-SUP 01 IT-SUP 02 IT-SUP 03 IT-SUP 04 IT-SUP 05 IT-SUP 06 IT-SUP 07 IT-SUP 08 IT-SUP 09 IT-SUP 10 NETWORK SYSTEMS IT-NET 1 IT-NET 02 IT-NET 03 IT-NET 04 IT-PRG 01 IT-PRG 02 IT-PRG 03 IT-PRG 04 IT-PRG 05 IT-PRG 06 IT-PRG 07 IT-PRG 08 IT-PRG 09 IT-PRG 10 WEB AND DIGITAL	**KEY IDEAS/DETAILS** ***GRADES 9-10*** Standard PCS.3.5.9-10.A Standard PCS.3.5.9-10.B Standard PCS.3.5.9-10.C ***GRADES 11-12*** Standard PCS.3.5.11-12A Standard PCS.3.5.11-12.B Standard PCS.3.5.11-12.C **CRAFT AND STRUCTURE** ***GRADES 9-10*** Standard PCS.3.5.9-10.D Standard PCS.3.5.9-10.E Standard PCS.3.5.9-10.F ***GRADES 11-12*** Standard PCS.3.5.11-12.D Standard PCS.3.5.11-12.E Standard PCS.3.5.11-12.F **INTEGRATE KNOWLEDGE/ IDEAS** ***GRADES 9-10*** Standard PCS.3.5.9-10.G Standard PCS.3.5.9-10.H Standard PCS.3.5.9-10.I ***GRADES 9-12*** Standard PCS.3.5.11-12.G Standard PCS.3.5.11-12.H Standard PCS.3.5.11-12.I	**TEXT TYPES/ PURPOSE** ***GRADES 9-10*** Standard PCS.3.6.9-10.A Standard PCS.3.6.9-10.B ***GRADES 11-12*** Standard PCS.3.6.11-12.A Standard PCS.3.6.11-12.B **PRODUCTION AND DISTRIBUTION OF WRITING** ***GRADES 9-10*** Standard PCS.3.6.9-10.C Standard PCS.3.6.9-10 D Standard PCS.3.6.9-10.E ***GRADES 11-12*** Standard PCS.3.6.11-12 C Standard.PCS.3.6.11-12.D Standard PCS.3.6.11- 12 E **RESEARCH** ***GRADES 9-10*** Standard PCS.3.6.9-10.F Standard PCS.3.6.9-10.G Standard PCS.3.6.9-10.H ***GRADES 11-12*** Standard PCS.3.6.11-12.F Standard PCS.3.6.11-12.G Standard PCS.3.6.11-12.H **RANGE OF WRITING** ***GRADES 9-10*** Standard PCS.3.5.9-10.I ***GRADES 11-12*** Standard CC.3.5.11-12.I	

Secondary Competency Task Grid with Unit and Task Numbers	Common Career Technical Core Standards	Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5	Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6	Pennsylvania Core Standards for Mathematics Standard 2.1
	IT-WD 01 IT-WD 02 IT-WD 03 IT-WD 04 IT-WD 05 IT-WD 06 IT-WD 07 IT-WD 08 IT-WD 09 IT-WD 10			

300 Business Law and Ethics

Secondary Competency Task Grid with Unit and Task Numbers	Common Career Technical Core Standards	Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5	Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6	Pennsylvania Core Standards for Mathematics Standard 2.1
301 Understand the principles of business law and business ethics. 302 Explain how business policies in computer technology impact such areas as intellectual property, contract law, criminal law, tort law, and international law. 303 Explain crimes often associated with businesses and organizations (e.g., embezzlement, extortion, and computer crimes). 304 Analyze business law case studies and know how they relate to business practices. 305 Identify improper use of business technology and property (e.g., computers, personal digital assistants, cell phones, and telephones). 306 Identify legal safeguards to protect your right of computer privacy. 307 Identify cyber law and digital forensics as an emerging trend in the 21st century. 308 Identify and explain the variety of E-commerce models (i.e. B2B, C2B, B2C, C2C). 309 Review current E-commerce market segments (business, finance, retail, travel and media). 310 Incorporate technology to increase productivity in the workplace.	**Refer to the end of this document for an explanation of the following standards and sample indicators:** STANDARDS: INFORMATION TECHNOLOGY IT 04 IT 05 IT 08 IT 09 IT 10	**KEY IDEAS/DETAILS** ***GRADES 9-10*** Standard PCS.3.5.9-10.A Standard PCS.3.5.9-10.B Standard PCS.3.5.9-10.C ***GRADES 11-12*** Standard PCS.3.5.11-12A Standard PCS.3.5.11-12.B Standard PCS.3.5.11-12.C **CRAFT AND STRUCTURE** ***GRADES 9-10*** Standard PCS.3.5.9-10.D Standard PCS.3.5.9-10.E Standard PCS.3.5.9-10.F ***GRADES 11-12*** Standard PCS.3.5.11-12.D Standard PCS.3.5.11-12.E Standard PCS.3.5.11-12.F **INTEGRATE KNOWLEDGE/ IDEAS** ***GRADES 9-10*** Standard PCS.3.5.9-10.G Standard PCS.3.5.9-10.H Standard PCS.3.5.9-10.I ***GRADES 9-12*** Standard PCS.3.5.11-12.G Standard PCS.3.5.11-12.H Standard PCS.3.5.11-12.I	**TEXT TYPES/ PURPOSE** ***GRADES 9-10*** Standard PCS.3.6.9-10.A Standard PCS.3.6.9-10.B ***GRADES 11-12*** Standard PCS.3.6.11-12.A Standard PCS.3.6.11-12.B **PRODUCTION AND DISTRIBUTION OF WRITING** ***GRADES 9-10*** Standard PCS.3.6.9-10.C Standard PCS.3.6.9-10 D Standard PCS.3.6.9-10.E ***GRADES 11-12*** Standard PCS.3.6.11-12 C Standard.PCS.3.6.11-12.D Standard PCS.3.6.11- 12 E **RESEARCH** ***GRADES 9-10*** Standard PCS.3.6.9-10.F Standard PCS.3.6.9-10.G Standard PCS.3.6.9-10.H ***GRADES 11-12*** Standard PCS.3.6.11-12.F Standard PCS.3.6.11-12.G Standard PCS.3.6.11-12.H **RANGE OF WRITING** ***GRADES 9-10*** Standard PCS.3.5.9-10.I ***GRADES 11-12*** Standard CC.3.5.11-12.I	**NUMBERS AND OPERATIONS** Standard PCS.2.1.HS.F.1 Standard PCS.2.1.HS.F.2 Standard PCS.2.1.HS.F.3 Standard PCS.2.1.HS.F.4 Standard PCS.2.1.HS.F.5 Standard PCS.2.1.HS.F.6 Standard PCS.2.1.HS.F.7

400 Computer and Internet Fundamentals

Secondary Competency Task Grid with Unit and Task Numbers	Common Career Technical Core Standards	Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5	Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6	Pennsylvania Core Standards for Mathematics Standard 2.1
401 Identify terminology associated with the internet and world wide web. 402 Research and investigate emerging technologies. 403 Use advanced search engine techniques to locate resources. 404 Identify components of a computer system and related peripherals. 405 Navigate and manage operating systems and utility programs. 406 Identify the types of telecommunication devices and networks. 407 Demonstrate proper file management techniques. 408 Describe a variety of cloud computing services. 409 Demonstrate ability to modify and structure documents to meet industry standards.	**Refer to the end of this document for an explanation of the following standards and sample indicators:** STANDARDS INFORMATION TECHNOLOGY IT 01 IT 02 IT 03 IT 04 IT 06 IT 07 IT 10 IT 11 _____ INFORMATION SUPPORT SERVICES IT-SUP 01 IT-SUP 02 IT-SUP 03 IT-SUP 04 IT-SUP 05 IT-SUP 06 IT-SUP 07 IT-SUP 08 IT-SUP 09 IT-SUP 10 NETWORK SYSTEMS IT-NET 1 IT-NET 02 IT-NET 03 IT-NET 04 PROGRAMMING AND SOFTWARE IT-PRG 01 IT-PRG 02 IT-PRG 03 IT-PRG 04 IT-PRG 05 IT-PRG 06 IT-PRG 07 IT-PRG 08 IT-PRG 09 IT-PRG 10	**KEY IDEAS/DETAILS** ***GRADES 9-10*** Standard PCS.3.5.9-10.A Standard PCS.3.5.9-10.B Standard PCS.3.5.9-10.C ***GRADES 11-12*** Standard PCS.3.5.11-12A Standard PCS.3.5.11-12.B Standard PCS.3.5.11-12.C **CRAFT AND STRUCTURE** ***GRADES 9-10*** Standard PCS.3.5.9-10.D Standard PCS.3.5.9-10.E Standard PCS.3.5.9-10.F ***GRADES 11-12*** Standard PCS.3.5.11-12.D Standard PCS.3.5.11-12.E Standard PCS.3.5.11-12.F **INTEGRATE KNOWLEDGE/ IDEAS** ***GRADES 9-10*** Standard PCS.3.5.9-10.G Standard PCS.3.5.9-10.H Standard PCS.3.5.9-10.I ***GRADES 9-12*** Standard PCS.3.5.11-12.G Standard PCS.3.5.11-12.H Standard PCS.3.5.11-12.I	**TEXT TYPES/ PURPOSE** ***GRADES 9-10*** Standard PCS.3.6.9-10.A Standard PCS.3.6.9-10.B ***GRADES 11-12*** Standard PCS.3.6.11-12.A Standard PCS.3.6.11-12.B **PRODUCTION AND DISTRIBUTION OF WRITING** ***GRADES 9-10*** Standard PCS.3.6.9-10.C Standard PCS.3.6.9-10 D Standard PCS.3.6.9-10.E ***GRADES 11-12*** Standard PCS.3.6.11-12 C Standard.PCS.3.6.11-12.D Standard PCS.3.6.11- 12 E **RESEARCH** ***GRADES 9-10*** Standard PCS.3.6.9-10.F Standard PCS.3.6.9-10.G Standard PCS.3.6.9-10.H ***GRADES 11-12*** Standard PCS.3.6.11-12.F Standard PCS.3.6.11-12.G Standard PCS.3.6.11-12.H **RANGE OF WRITING** ***GRADES 9-10*** Standard PCS.3.5.9-10.I ***GRADES 11-12*** Standard CC.3.5.11-12.I	

Secondary Competency Task Grid with Unit and Task Numbers	Common Career Technical Core Standards	Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5	Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6	Pennsylvania Core Standards for Mathematics Standard 2.1
	WEB AND DIGITAL IT-WD 01 IT-WD 02 IT-WD 03 IT-WD 04 IT-WD 05 IT-WD 06 IT-WD 07 IT-WD 08 IT-WD 09 IT-WD 10			

500 Data Analysis Software

Secondary Competency Task Grid with Unit and Task Numbers	Common Career Technical Core Standards	Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5	Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6	Pennsylvania Core Standards for Mathematics Standard 2.1
501 Manage and manipulate data using spreadsheets. 502 Generate and analyze graphs and associated data using spreadsheet software. 503 Create and edit spreadsheet macros. 504 Demonstrate data integration (e.g., payroll or inventory data) using spreadsheet software. 505 Perform business statistical algorithms and built in functions using spreadsheet software.	**Refer to the end of this document for an explanation of the following standards and sample indicators:** STANDARDS: PROGRAMMING AND SOFTWARE IT-PRG 01 IT-PRG 02 IT-PRG 03 IT-PRG 04 IT-PRG 05 IT-PRG 06 IT-PRG 07 IT-PRG 08 IT-PRG 09 IT-PRG 10	**KEY IDEAS/DETAILS** ***GRADES 9-10*** Standard PCS.3.5.9-10.A Standard PCS.3.5.9-10.B Standard PCS.3.5.9-10.C ***GRADES 11-12*** Standard PCS.3.5.11-12A Standard PCS.3.5.11-12.B Standard PCS.3.5.11-12.C **CRAFT AND STRUCTURE** ***GRADES 9-10*** Standard PCS.3.5.9-10.D Standard PCS.3.5.9-10.E Standard PCS.3.5.9-10.F ***GRADES 11-12*** Standard PCS.3.5.11-12.D Standard PCS.3.5.11-12.E Standard PCS.3.5.11-12.F **INTEGRATE** **KNOWLEDGE/ IDEAS** ***GRADES 9-10*** Standard PCS.3.5.9-10.G Standard PCS.3.5.9-10.H Standard PCS.3.5.9-10.I ***GRADES 9-12*** Standard PCS.3.5.11-12.G Standard PCS.3.5.11-12.H Standard PCS.3.5.11-12.I	**TEXT TYPES/ PURPOSE** ***GRADES 9-10*** Standard PCS.3.6.9-10.A Standard PCS.3.6.9-10.B ***GRADES 11-12*** Standard PCS.3.6.11-12.A Standard PCS.3.6.11-12.B **PRODUCTION AND DISTRIBUTION OF WRITING** ***GRADES 9-10*** Standard PCS.3.6.9-10.C Standard PCS.3.6.9-10 D Standard PCS.3.6.9-10.E ***GRADES 11-12*** Standard PCS.3.6.11-12 C Standard.PCS.3.6.11-12.D Standard PCS.3.6.11- 12 E **RESEARCH** ***GRADES 9-10*** Standard PCS.3.6.9-10.F Standard PCS.3.6.9-10.G Standard PCS.3.6.9-10.H ***GRADES 11-12*** Standard PCS.3.6.11-12.F Standard PCS.3.6.11-12.G Standard PCS.3.6.11-12.H **RANGE OF WRITING** ***GRADES 9-10*** Standard PCS.3.5.9-10.I ***GRADES 11-12*** Standard CC.3.5.11-12.I	**NUMBERS AND OPERATIONS** Standard PCS.2.1.HS.F.1 Standard PCS.2.1.HS.F.2 Standard PCS.2.1.HS.F.3 Standard PCS.2.1.HS.F.4 Standard PCS.2.1.HS.F.5 Standard PCS.2.1.HS.F.6 Standard PCS.2.1.HS.F.7 **OPERATIONS AND ALGEBRAIC THINKING Algebra** Standard PCS.2.2.HS.D.1 Standard PCS.2.2.HS.D.2 Standard PCS.2.2.HS.D.3. Standard PCS.2.2.HS.D.4 Standard PCS.2.2.HS.D.5 Standard PCS.2.2.HS.D.6 Standard PCS.2.2.HS.D.7 Standard PCS.2.2.HS.D.8 Standard PCS.2.2.HS.D.9 Standard PCS.2.2.HS.D.10 **OPERATIONS AND ALGEBRAIC THINKING Functions** Standard PCS.2.2.HS.C.1 Standard PCS.2.2.HS.C.2 Standard PCS.2.2.HS.C. Standard PCS.2.2.HS.C.4. Standard PCS.2.2.HS.C.5 Standard PCS.2.2.HS.C.6 Standard PCS2.2.HS.C.7 Standard PCS.2.2.HS.C.8 Standard PCS.2.2.HS.C.9 **MEASUREMENT, DATA AND PROBABILITY** Standard PCS.2.4.HS.B.1 Standard PCS.2.4.HS.B.2 Standard PCS.2.4.HS.B.3 Standard PCS.2.4.HS.B.4 Standard PCS.2.4.HS.B.5 Standard PCS.2.4.HS.B.6 Standard PCS.2.4.HS.B.7

600 Database Administration

Secondary Competency Task Grid with Unit and Task Numbers	Common Career Technical Core Standards	Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5	Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6	Pennsylvania Core Standards for Mathematics Standard 2.1
601 Demonstrate knowledge of database design fundamentals, theories and terminology. 602 Create entity relationship diagram. 603 Create tables and modify fields. 604 Build forms to capture, manipulate and display data. 605 Construct and manage queries using one or more tables. 606 Design and arrange reports using filters. 607 Apply normalization to relational databases. 608 Execute calculated/built in functions and procedures using queries. 609 Implement security, backup and recovery procedures. 610 Import and export data into other applications.	**Refer to the end of this document for an explanation of the following standards and sample indicators:** STANDARDS: INFORMATION TECHNOLOGY IT 04 IT 07 IT 08 IT 09 PROGRAMMING AND SOFTWARE IT-PRG 01 IT-PRG 02 IT-PRG 03 IT-PRG 04 IT-PRG 05 IT-PRG 06 IT-PRG 07 IT-PRG 08 IT-PRG 09 IT-PRG 10	**KEY IDEAS/DETAILS** **_GRADES 9-10_** Standard PCS.3.5.9-10.A Standard PCS.3.5.9-10.B Standard PCS.3.5.9-10.C **_GRADES 11-12_** Standard PCS.3.5.11-12A Standard PCS.3.5.11-12.B Standard PCS.3.5.11-12.C **CRAFT AND STRUCTURE** **_GRADES 9-10_** Standard PCS.3.5.9-10.D Standard PCS.3.5.9-10.E Standard PCS.3.5.9-10.F **_GRADES 11-12_** Standard PCS.3.5.11-12.D Standard PCS.3.5.11-12.E Standard PCS.3.5.11-12.F **INTEGRATE KNOWLEDGE/ IDEAS** **_GRADES 9-10_** Standard PCS.3.5.9-10.G Standard PCS.3.5.9-10.H Standard PCS.3.5.9-10.I **_GRADES 9-12_** Standard PCS.3.5.11-12.G Standard PCS.3.5.11-12.H Standard PCS.3.5.11-12.I	**TEXT TYPES/ PURPOSE** **_GRADES 9-10_** Standard PCS.3.6.9-10.A Standard PCS.3.6.9-10.B **_GRADES 11-12_** Standard PCS.3.6.11-12.A Standard PCS.3.6.11-12.B **PRODUCTION AND DISTRIBUTION OF WRITING** **_GRADES 9-10_** Standard PCS.3.6.9-10.C Standard PCS.3.6.9-10 D Standard PCS.3.6.9-10.E **_GRADES 11-12_** Standard PCS.3.6.11-12 C Standard.PCS.3.6.11-12.D Standard PCS.3.6.11- 12 E **RESEARCH** **_GRADES 9-10_** Standard PCS.3.6.9-10.F Standard PCS.3.6.9-10.G Standard PCS.3.6.9-10.H **_GRADES 11-12_** Standard PCS.3.6.11-12.F Standard PCS.3.6.11-12.G Standard PCS.3.6.11-12.H **RANGE OF WRITING** **_GRADES 9-10_** Standard PCS.3.5.9-10.I **_GRADES 11-12_** Standard CC.3.5.11-12.I	**NUMBERS AND OPERATIONS** Standard PCS.2.1.HS.F.1 Standard PCS.2.1.HS.F.2 Standard PCS.2.1.HS.F.3 Standard PCS.2.1.HS.F.4 Standard PCS.2.1.HS.F.5 Standard PCS.2.1.HS.F.6 Standard PCS.2.1.HS.F.7 **OPERATIONS AND ALGEBRAIC THINKING** Algebra Standard PCS.2.2.HS.D.1 Standard PCS.2.2.HS.D.2 Standard PCS.2.2.HS.D.3. Standard PCS.2.2.HS.D.4 Standard PCS.2.2.HS.D.5 Standard PCS.2.2.HS.D.6 Standard PCS.2.2.HS.D.7 Standard PCS.2.2.HS.D.8 Standard PCS.2.2.HS.D.9 Standard PCS.2.2.HS.D.10 **OPERATIONS AND ALGEBRAIC THINKING** Functions Standard PCS.2.2.HS.C.1 Standard PCS.2.2.HS.C.2 Standard PCS.2.2.HS.C. Standard PCS.2.2.HS.C.4. Standard PCS.2.2.HS.C.5 Standard PCS.2.2.HS.C.6 Standard PCS2.2.HS.C.7 Standard PCS.2.2.HS.C.8 Standard PCS.2.2.HS.C.9 **MEASUREMENT, DATA AND PROBABILITY** Standard PCS.2.4.HS.B.1 Standard PCS.2.4.HS.B.2 Standard PCS.2.4.HS.B.3 Standard PCS.2.4.HS.B.4 Standard PCS.2.4.HS.B.5 Standard PCS.2.4.HS.B.6 Standard PCS.2.4.HS.B.7

700 Programming and System Development

Secondary Competency Task Grid with Unit and Task Numbers	Common Career Technical Core Standards	Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5	Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6	Pennsylvania Core Standards for Mathematics Standard 2.1
701 Apply working knowledge of the system development lifecycle (system investigation/project proposal, analysis, design, code/test, implementation and maintenance). **702** Differentiate programming fundamentals - system processing, integration, generations of languages, binary code, object code, source code. **703** Declare and manipulate appropriate data types variables, such as arrays and string data. **704** Utilize program control structures (e.g., decisions, loops, functions/subroutines, arithmetic and logical operations, etc.)	**Refer to the end of this document for an explanation of the following standards and sample indicators:** STANDARDS: INFORMATION TECHNOLOGY IT 02 IT 04 IT 06 IT 11 IT 12 PROGRAMMING AND SOFTWARE IT-PRG 01 IT-PRG 02 IT-PRG 03 IT-PRG 04 IT-PRG 05 IT-PRG 06 IT-PRG 07 IT-PRG 08 IT-PRG 09 IT-PRG 10	**KEY IDEAS/DETAILS** *GRADES 9-10* Standard PCS.3.5.9-10.A Standard PCS.3.5.9-10.B Standard PCS.3.5.9-10.C *GRADES 11-12* Standard PCS.3.5.11-12A Standard PCS.3.5.11-12.B Standard PCS.3.5.11-12.C **CRAFT AND STRUCTURE** *GRADES 9-10* Standard PCS.3.5.9-10.D Standard PCS.3.5.9-10.E Standard PCS.3.5.9-10.F *GRADES 11-12* Standard PCS.3.5.11-12.D Standard PCS.3.5.11-12.E Standard PCS.3.5.11-12.F **INTEGRATE KNOWLEDGE/ IDEAS** *GRADES 9-10* Standard PCS.3.5.9-10.G Standard PCS.3.5.9-10.H Standard PCS.3.5.9-10.I *GRADES 9-12* Standard PCS.3.5.11-12.G Standard PCS.3.5.11-12.H Standard PCS.3.5.11-12.I	**TEXT TYPES/ PURPOSE** *GRADES 9-10* Standard PCS.3.6.9-10.A Standard PCS.3.6.9-10.B *GRADES 11-12* Standard PCS.3.6.11-12.A Standard PCS.3.6.11-12.B **PRODUCTION AND DISTRIBUTION OF WRITING** *GRADES 9-10* Standard PCS.3.6.9-10.C Standard PCS.3.6.9-10 D Standard PCS.3.6.9-10.E *GRADES 11-12* Standard PCS.3.6.11-12 C Standard.PCS.3.6.11-12.D Standard PCS.3.6.11- 12 E **RESEARCH** *GRADES 9-10* Standard PCS.3.6.9-10.F Standard PCS.3.6.9-10.G Standard PCS.3.6.9-10.H *GRADES 11-12* Standard PCS.3.6.11-12.F Standard PCS.3.6.11-12.G Standard PCS.3.6.11-12.H **RANGE OF WRITING** *GRADES 9-10* Standard PCS.3.5.9-10.I *GRADES 11-12* Standard CC.3.5.11-12.I	**NUMBERS AND OPERATIONS** Standard PCS.2.1.HS.F.1 Standard PCS.2.1.HS.F.2 Standard PCS.2.1.HS.F.3 Standard PCS.2.1.HS.F.4 Standard PCS.2.1.HS.F.5 Standard PCS.2.1.HS.F.6 Standard PCS.2.1.HS.F.7

800 Demonstrate a Variety of Programming Systems

Secondary Competency Task Grid with Unit and Task Numbers	Common Career Technical Core Standards	Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5	Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6	Pennsylvania Core Standards for Mathematics Standard 2.1
801 Create working graphical user interfaces (GUI). **802** Create, test and debug successful computer programs. **803** Create clear and thorough program documentation.	**Refer to the end of this document for an explanation of the following standards and sample indicators:** STANDARDS: INFORMATION TECHNOLOGY IT 02 IT 07 IT 11 IT 12 PROGRAMMING AND SOFTWARE IT-PRG 01 IT-PRG 02 IT-PRG 03 IT-PRG 04 IT-PRG 05 IT-PRG 06 IT-PRG 07 IT-PRG 08 IT-PRG 09 IT-PRG 10	**KEY IDEAS/DETAILS** ***GRADES 9-10*** Standard PCS.3.5.9-10.A Standard PCS.3.5.9-10.B Standard PCS.3.5.9-10.C ***GRADES 11-12*** Standard PCS.3.5.11-12A Standard PCS.3.5.11-12.B Standard PCS.3.5.11-12.C **CRAFT AND STRUCTURE** ***GRADES 9-10*** Standard PCS.3.5.9-10.D Standard PCS.3.5.9-10.E Standard PCS.3.5.9-10.F ***GRADES 11-12*** Standard PCS.3.5.11-12.D Standard PCS.3.5.11-12.E Standard PCS.3.5.11-12.F **INTEGRATE KNOWLEDGE/ IDEAS** ***GRADES 9-10*** Standard PCS.3.5.9-10.G Standard PCS.3.5.9-10.H Standard PCS.3.5.9-10.I ***GRADES 9-12*** Standard PCS.3.5.11-12.G Standard PCS.3.5.11-12.H Standard PCS.3.5.11-12.I	**TEXT TYPES/ PURPOSE** ***GRADES 9-10*** Standard PCS.3.6.9-10.A Standard PCS.3.6.9-10.B ***GRADES 11-12*** Standard PCS.3.6.11-12.A Standard PCS.3.6.11-12.B **PRODUCTION AND DISTRIBUTION OF WRITING** ***GRADES 9-10*** Standard PCS.3.6.9-10.C Standard PCS.3.6.9-10 D Standard PCS.3.6.9-10.E ***GRADES 11-12*** Standard PCS.3.6.11-12 C Standard.PCS.3.6.11-12.D Standard PCS.3.6.11- 12 E **RESEARCH** ***GRADES 9-10*** Standard PCS.3.6.9-10.F Standard PCS.3.6.9-10.G Standard PCS.3.6.9-10.H ***GRADES 11-12*** Standard PCS.3.6.11-12.F Standard PCS.3.6.11-12.G Standard PCS.3.6.11-12.H **RANGE OF WRITING** ***GRADES 9-10*** Standard PCS.3.5.9-10.I ***GRADES 11-12*** Standard CC.3.5.11-12.I	

900 Computer Maintenance/Troubleshooting

Secondary Competency Task Grid with Unit and Task Numbers	Common Career Technical Core Standards	Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5	Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6	Pennsylvania Core Standards for Mathematics Standard 2.1
901 Demonstrate the troubleshooting theory. 902 Analyze common hardware processing, problems and performance issues. 903 Analyze common software processing, problems and performance issues. 904 Integrate common preventive maintenance techniques. 905 Analyze basic network processing, problems and performance issues.	**Refer to the end of this document for an explanation of the following standards and sample indicators:** STANDARDS: INFORMATION TECHNOLOGY IT 02 IT 07 IT 08 IT 11 IT 12 NETWORK SYSTEMS IT-NET 1 IT-NET 02 IT-NET 03 IT-NET 04 INFORMATION SUPPORT SERVICES IT-SUP 01 IT-SUP 02 IT-SUP 03 IT-SUP 04 IT-SUP 05 IT-SUP 06 IT-SUP 07 IT-SUP 08 IT-SUP 09 IT-SUP 10	**KEY IDEAS/DETAILS** ***GRADES 9-10*** Standard PCS.3.5.9-10.A Standard PCS.3.5.9-10.B Standard PCS.3.5.9-10.C ***GRADES 11-12*** Standard PCS.3.5.11-12A Standard PCS.3.5.11-12.B Standard PCS.3.5.11-12.C **CRAFT AND STRUCTURE** ***GRADES 9-10*** Standard PCS.3.5.9-10.D Standard PCS.3.5.9-10.E Standard PCS.3.5.9-10.F ***GRADES 11-12*** Standard PCS.3.5.11-12.D Standard PCS.3.5.11-12.E Standard PCS.3.5.11-12.F **INTEGRATE KNOWLEDGE/ IDEAS** ***GRADES 9-10*** Standard PCS.3.5.9-10.G Standard PCS.3.5.9-10.H Standard PCS.3.5.9-10.I ***GRADES 9-12*** Standard PCS.3.5.11-12.G Standard PCS.3.5.11-12.H Standard PCS.3.5.11-12.I	**TEXT TYPES/ PURPOSE** ***GRADES 9-10*** Standard PCS.3.6.9-10.A Standard PCS.3.6.9-10.B ***GRADES 11-12*** Standard PCS.3.6.11-12.A Standard PCS.3.6.11-12.B **PRODUCTION AND DISTRIBUTION OF WRITING** ***GRADES 9-10*** Standard PCS.3.6.9-10.C Standard PCS.3.6.9-10 D Standard PCS.3.6.9-10.E ***GRADES 11-12*** Standard PCS.3.6.11-12 C Standard.PCS.3.6.11-12.D Standard PCS.3.6.11- 12 E **RESEARCH** ***GRADES 9-10*** Standard PCS.3.6.9-10.F Standard PCS.3.6.9-10.G Standard PCS.3.6.9-10.H ***GRADES 11-12*** Standard PCS.3.6.11-12.F Standard PCS.3.6.11-12.G Standard PCS.3.6.11-12.H **RANGE OF WRITING** ***GRADES 9-10*** Standard PCS.3.5.9-10.I ***GRADES 11-12*** Standard CC.3.5.11-12.I	**NUMBERS AND OPERATIONS** Standard PCS.2.1.HS.F.1 Standard PCS.2.1.HS.F.2 Standard PCS.2.1.HS.F.3 Standard PCS.2.1.HS.F.4 Standard PCS.2.1.HS.F.5 Standard PCS.2.1.HS.F.6 Standard PCS.2.1.HS.F.7

Reference List for 12 Common Core Technical Standards
in Communication Technology/Technicians and Support Services
with Sample Indicators for each Standard

1. Demonstrate effective professional communication skills and practices that enable positive customer relationships.
   - 1 a. Identify organization's products and services (including own strengths as an agent of the company).
   - 1 b. Recognize the importance of all customers to the business.
2. Use product or service design processes and guidelines to produce a quality information technology (IT) product or service.
   - 2 a. Test products for reliability.
   - 2 b. Initiate predictive maintenance procedures.
   - 2 c. Document a Quality Assurance (QA) program (includes creating a plan and evaluating effectiveness of the program).
   - 2 d. Plan for products/services using reliability factors.
   - 2 e. Create products/services using reliability factors.
   - 2 f. Test new products/services for reliability.
   - 2 g. Maintain the reliability of new products/services.
3. Demonstrate the use of cross functional teams in achieving IT project goals.
   - 3 a. Consider the benefits of using a cross functional team in policy and procedure development.
   - 3 b. Identify desired group and team behavior in an IT context.
   - 3 c. Explain technical concepts to various audiences in nontechnical terms.
   - 3 d. Describe strategies for maximizing productivity in a high tech environment.
4. Demonstrate positive cyber citizenry by applying industry accepted ethical practices and behaviors.
   - 4 a. Demonstrate knowledge of the legal issues that face IT professionals.
   - 4 b. Identify issues and trends affecting computers and information privacy.
   - 4 c. Explain legal issues involved in a company security policy.
      Identify legal issues involved concerning a security breach. Summarize the rights and responsibilities of IT workers. Identify ethical issues common to the IT field.
5. Explain the implications of IT on business development.
   - 5 a. Demonstrate knowledge of how both PCs and larger computer systems impact people and are used in business/industry/government and other institutions.
   - 5 b. Demonstrate knowledge of the impact of computers on career pathways in business/industry (e.g. how computers have eliminated and created jobs).
   - 5 c. Demonstrate knowledge of the impact of computers on access to information and information exchange worldwide.
   - 5 d. Demonstrate knowledge of ethical issues that have surfaced in the information age.

6. Describe trends in emerging and evolving computer technologies and their influence on IT practices.
   6 a. Identify new technologies relevant to information technology.
   6 b. Assess the importance of new technologies to future developments and to future knowledge worker productivity.
   6 c. Identify new and emerging drivers and inhibitors of information technology change.
   6 d. Assess the potential importance and impact of new IT technologies in the future.
7. Perform standard computer backup and restore procedures to protect IT information.
   7 a. Recognize the need for regular backup procedures.
   7 b. Load backup software.
   7 c. Load compression drive backup software.
   7 d. Install surge suppression protection.
   7 e. Identify battery backup equipment.
   7 f. Maintain battery backup system.
   7 g. Identify hot and warm site backup concepts.
8. Recognize and analyze potential IT security threats to develop and maintain security requirements.
   8 a. Describe potential security threats to information systems.
   8 b. Identify the range of security needs and the problems that can occur due to security lapses.
   8 c. Maximize threat reduction.
   8 d. Assess exposure to security issues.
   8 e. Implement countermeasures.
   8 f. Ensure compliance with security rules, regulations and codes.
   8 g. Demonstrate knowledge of virus protection strategy.
   8 h. Implement security procedures in accordance with business ethics.
   8 i. Develop plans to address secure threats.
   8 j. Document security procedures.
9. Describe quality assurance practices and methods employed in producing and providing quality IT products and services.
   8 a. Demonstrate knowledge of the historical evolution of quality assurance/total quality management (e.g., Deming, ISO 9000).
   9 a. Demonstrate knowledge of changes brought about by quality leaders in the world.
   9 b. Demonstrate knowledge of the ISO 9000 process.
   9 c. Demonstrate knowledge of the standards/requirements for the Baldridge award.
   9 d. Demonstrate knowledge of successful efforts by industry to improve quality and/or reduce costs.
   9 e. Demonstrate knowledge of the control devices used in functional areas (e.g. SPC, equipment).
   9 f. Demonstrate knowledge of the relationship among organizational structures, policies, procedures and quality assurance.
   9 g. Identify internal and external customers.
   9 h. Differentiate between prevention and detection.
   9 i.   Differentiate between variable and attribute data.
   9 j.   Identify types of control charts.

9 k. Demonstrate knowledge of how statistical techniques are used to control quality (e.g., SPC, DOE, CR).

9 l. Demonstrate knowledge of quality management terminology.

9 m.   Identify the role of quality within the organization.

9 n. Identify the features and benefits of quality planning.

10. Describe the use of computer forensics to prevent and solve information technology crimes and security breaches.

10 a. Define computer forensics.

10 b. List some of the basic skills and knowledge a computer forensics specialist should possess.

10 c. Identify the circumstances under which computer forensics evidence is typically used, who typically uses such evidence and how it is used.

10 d. Identify and attempt to retrieve possible evidence that may exist on a computer system.

10 e. List what should and should not be done with the computer and evidence during an investigation.

10 f. List common internet crimes.

10 g. List some prevention actions related to cybercrime.

10 h. Describe techniques to identify criminal activity.

10 i.   Identify how one files a complaint if a cybercrime is suspected or has occurred.

11. Demonstrate knowledge of the hardware components associated with information systems.

12. Compare key functions and applications of software and determine maintenance strategies for computer systems.