



# Regional Occupational Program

## Medical Insurance Coding and Billing Specialist 2026-2027

### COURSE DESCRIPTION

This course prepares students for entry-level medical insurance billing, coding, and health information support roles in physician offices, clinics, hospitals, and other healthcare settings. Students develop foundational skills in medical terminology, health records, insurance plans, reimbursement methods, ICD-10-CM, CPT, HCPCS, CMS-1500 and UB-04 claim forms, Explanation of Benefits, secondary insurance, HIPAA, documentation requirements, coding ethics, and claims processing. Emphasis is placed on accurate coding, legal and ethical billing practices, patient confidentiality, electronic health records, problem solving, communication, and workplace readiness. This course provides preparation related to medical coding certification exam content, such as the Certified Professional Coder (CPC), but certification eligibility and exam requirements are determined by the certifying organization.

#### Course Information

Course Length: 1 Year  
 Prerequisite: Basic math and keyboarding  
 Medical Core 1 or 2 desirable  
 Course Level: Capstone  
 UC: No  
 Articulated: No  
 Industry Cert.: Medical Coding Certification Exam  
 Preparation, such as Certified  
 Professional Coder (CPC)  
 Industry Sector: Health Science and Medical  
 Technology  
 Pathway: Healthcare Administrative Services  
 CALPADS: 7932

#### O\*Net SOC Codes

29-2072.00 Medical Records Specialists  
 29-9021.00 Health Information  
 Technologists/Medical Registrars  
 43-4171.00 Receptionists and Information  
 Clerks

#### Legend

CTE - PS CTE Pathway Standards  
 CRP Career Ready Practices  
 CTE - AS CTE Anchor Standards  
 CCSS Common Core State Standards  
 ISTE International Society for  
 Technology in Education

*Includes updates from 25/26 Health Science and Medical Technology Advisory  
[Advisory Minutes](#)*

## Medical Insurance Coding and Billing Specialist

### Course Orientation

- a. Discuss objectives for this course, including competencies, teacher expectations, classroom policies, and procedures.
- b. Identify and discuss the acquisition of transferable skills (communication, collaboration, creativity, and critical thinking) and their importance to being college and career ready and for future personal and professional success.
- c. Review objectives, competencies, and course syllabus.
- d. Discuss student and teacher expectations, including behavior, class rules, appropriate dress, pre-course knowledge, and grading policies, including enrollment and attendance requirements and procedures, and classroom/school safety and disaster procedures.
- e. Discuss next steps in course sequence related to the career pathway, the need for reinforcement of basic skills, transferrable skills, and postsecondary and career options.
- f. Discuss the Big Six: Career Ready Essentials and the Standards for Career Ready Practice as they relate to this course, all aspects of the industry sector, and being college and career ready.

### Big Six: Career Ready Essentials

| 1. Effective Communication  | CTE - PS | CRP  | CTE - AS   | CCSS   | ISTE   |
|---|----------|--|--|--|--|
| <ol style="list-style-type: none"> <li>a. <b>Demonstrate effective verbal communication and conflict resolution skills.</b></li> <li>b. <b>Use the writing process to develop written communication with the appropriate tone, organization, and format for the identified audience.</b></li> <li>c. Explain the effect of interpersonal skills on one's ability to communicate effectively and develop relationships.</li> <li>d. Describe the impact of ineffective communication on business relationships.</li> <li>e. Analyze the impact of vocabulary, body language, and tone on verbal communication.</li> <li>f. Demonstrate active listening skills.</li> <li>g. Accurately interpret industry-specific written communication.</li> <li>h. Model responsible and effective use of various communication technologies.</li> <li>i. Identify valid and reliable digital reference and resource materials.</li> <li>j. Gather information from multiple digital sources to compare and contrast, synthesize, and summarize.</li> <li>k. Identify and use appropriate communication and collaboration technologies.</li> <li>l. Utilize technology to problem solve, accomplish tasks, and to produce or publish products.</li> </ol> |          | <ol style="list-style-type: none"> <li><u>1</u></li> <li><u>2</u></li> <li><u>11</u></li> </ol>                                    | <ol style="list-style-type: none"> <li><u>2</u></li> <li><u>3</u></li> <li><u>4</u></li> <li><u>5</u></li> <li><u>7</u></li> <li><u>8</u></li> <li><u>9</u></li> <li><u>10</u></li> <li><u>11</u></li> </ol> | <p><u>LS</u><br/>9-10<br/>11-12.6</p> <p><u>SLS</u><br/>11-12.2<br/>9-10<br/>11-12.1<br/>11-12.1d</p> <p><u>WS</u><br/>11-12.7<br/>11-12.6</p> | <p><u>1b,c</u><br/><u>2c</u><br/><u>3b,c</u><br/><u>5c</u><br/><u>6b,c,d</u></p> |
| 2. Collaboration, Creativity, and Critical Thinking   | CTE - PS | CRP  | CTE - AS   | CCSS   | ISTE   |
| <ol style="list-style-type: none"> <li>a. <b>Demonstrate critical thinking skills for a variety of purposes and in different settings.</b></li> <li>b. <b>Collaborate to reach consensus on an identical objective through the sharing of knowledge, tasks, and learning.</b></li> <li>c. Discuss the importance of the critical thinking process to real-world applications.</li> </ol>  |          | <ol style="list-style-type: none"> <li><u>2</u></li> <li><u>4</u></li> <li><u>5</u></li> <li><u>7</u></li> <li><u>9</u></li> </ol> | <ol style="list-style-type: none"> <li><u>2</u></li> <li><u>3</u></li> <li><u>4</u></li> <li><u>5</u></li> </ol>   | <p><u>LS</u><br/>9-10<br/>11-12.6</p> <p><u>SLS</u></p>  | <p><u>1c</u><br/><u>3c,d</u><br/><u>4a-d</u><br/><u>5c,d</u><br/><u>6c</u></p>   |

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| <ul style="list-style-type: none"> <li>d. Evaluate the impact of creative thinking on problem solving and innovation in real-world applications.</li> <li>e. Compile work that demonstrates the process used to (elaborate, refine, analyze) evaluate original ideas and maximize creative efforts.</li> <li>f. Apply divergent and convergent thinking to the development of an original idea or solution.</li> <li>g. Examine real-world limits to adopting ideas.</li> <li>h. Demonstrate creative thinking (preparation, insight, evaluation, elaboration, and communication) to create a new idea or concept.</li> <li>i. Assume shared responsibility for collaborative work, and value the individual contributions made by each team member.</li> <li>j. Evaluate evidence, arguments, claims, and beliefs to identify connections.</li> <li>k. Identify bias, prejudice, propaganda, self-deception, distortion, and misinformation.</li> <li>l. Produce intellectual, informational, or material products that serve an authentic purpose.</li> <li>m. Work effectively and respectfully with those from diverse backgrounds or cultures.</li> <li>n. Demonstrate respect, trust, commitment, and the ability to compromise in collaborative projects.</li> </ul>                                  |                 | <u>10</u><br><u>11</u>           | <u>7</u><br><u>8</u><br><u>9</u><br><u>11</u>             | <u>9-10</u><br><u>11-12.1</u><br><u>11-12.1d</u><br><u>11-12.2</u><br><br><u>WS</u><br><u>11-12.7</u><br><u>11-12.6</u> | <u>7b,c,d</u>                           |
| <b>3. Leaders and Teams: Roles and Responsibilities</b>  | <b>CTE - PS</b> | <b>CRP</b>                       | <b>CTE - AS</b>   | <b>CCSS</b>   | <b>ISTE</b>                             |
| <ul style="list-style-type: none"> <li>a. <b>Determine the individual and team members' roles and responsibilities.</b></li> <li>b. <b>Demonstrate leadership skills and qualities (i.e., reliability, negotiation skills, initiative, positive reinforcement, recognition of others' efforts, problem-solving skills, conflict resolution, and delegation).</b></li> <li>c. Explain the importance of technical, social, and communication skills to team success.</li> <li>d. Compare and contrast leadership styles and their effectiveness in various situations.</li> <li>e. Organize and delegate responsibilities in a team setting to encourage ideas, perspectives, and contributions from all team members.</li> <li>f. Develop a strong sense of team identity by brainstorming solutions, volunteering, assisting others, practicing respect and courtesy, and taking initiative.</li> <li>g. Examine situations in which a follower becomes the leader.</li> <li>h. Describe twenty-first-century skills required across all occupations.</li> <li>i. Identify and discuss the characteristics of a successful team (i.e., leadership, cooperation, and effective decision-making).</li> <li>j. Leverage social and cultural differences to increase innovation and quality of work.</li> </ul> |                 | <u>7</u><br><u>8</u><br><u>9</u> | <u>3</u><br><u>7</u><br><u>8</u><br><u>9</u><br><u>11</u> | <u>SLS</u><br><u>11-12.2</u><br><u>9-10</u><br><u>11-12.1</u><br><u>11-12.1d</u><br><br><u>WS</u><br><u>11-12.6</u>     | <u>7a,c</u>                             |
| <b>4. Legal, Ethical, and Environmental Considerations</b>   | <b>CTE - PS</b> | <b>CRP</b>                       | <b>CTE - AS</b>   | <b>CCSS</b>   | <b>ISTE</b>                             |
| <ul style="list-style-type: none"> <li>a. <b>Demonstrate industry-specific ethical and legal practices.</b></li> <li>b. <b>Identify eco-friendly industry-specific practices and resources.</b></li> <li>c. Identify local, state, and federal regulatory agencies, entities, laws, and regulations.</li> </ul>  |                 | <u>5</u><br><u>7</u><br><u>8</u> | <u>3</u><br><u>5</u><br><u>7</u>                          | <u>WS</u><br><u>11-12.6</u><br><u>11-12.7</u>   | <u>2a,b</u><br><u>3a,b</u><br><u>5c</u> |

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| <ul style="list-style-type: none"> <li>d. Identify discrimination based on race, nationality, religion, gender, age, disability, or sexual orientation.</li> <li>e. Summarize the ethical and legal implications of workplace discrimination and harassment.</li> <li>f. Explain the concept of corporate citizenship.</li> <li>g. Examine an employer's role in protecting the health and welfare of employees, the community, and the environment.</li> <li>h. Analyze current environmental laws and regulations and their impact on industry.</li> <li>i. Compare and contrast both society's and industry's impact on the environment.</li> </ul>  |                 | <u>12</u>   | <u>8</u><br><u>9</u><br><u>11</u>  | <u>SLS</u><br><u>9-10</u><br><u>11-12.1</u><br><u>11-</u><br><u>12.1d</u><br><u>11-12.2</u>   | <u>6c</u>   |
| <b>5. Personal Growth and Career Planning</b>   | <b>CTE - PS</b> | <b>CRP</b>  | <b>CTE - AS</b>  | <b>CCSS</b>   | <b>ISTE</b>   |
| <ul style="list-style-type: none"> <li>a. <b>Demonstrate continued personal development and growth.</b></li> <li>b. <b>Develop and manage a personal growth and career plan.</b></li> <li>c. Explain the relationship between sound financial habits and financial security.</li> <li>d. Create and manage a personal financial plan.</li> <li>e. Demonstrate initiative in achieving personal and professional goals.</li> <li>f. Apply time management strategies to meet deadlines.</li> <li>g. Demonstrate a growth mindset through flexibility and a positive attitude.</li> <li>h. Select and demonstrate appropriate job-search and retention techniques.</li> <li>i. Demonstrate strategies to prepare for employment.</li> <li>j. Demonstrate interpersonal skills appropriate for the workplace.</li> <li>k. Elaborate on the importance of perseverance to personal and professional success.</li> <li>l. Discover personal career interests, aptitudes, and skills.</li> </ul>  |                 | <u>1</u><br><u>2</u><br><u>3</u><br><u>4</u><br><u>6</u>  | <u>2</u><br><u>3</u><br><u>4</u><br><u>7</u><br><u>8</u><br><u>11</u>              | <u>LS</u><br><u>9-10</u><br><u>11-12.6</u><br><br><u>SLS</u><br><u>9-10</u><br><u>11-12.1</u><br><u>11-12.1d</u><br><u>11-12.2</u><br><br><u>WS</u><br><u>11-12.6</u> | <u>1a</u><br><u>3a,c</u><br><u>4d</u><br><u>6a,d</u><br><u>7b</u> |
| <b>6. Workplace Safety and Personal Wellness</b>  | <b>CTE - PS</b> | <b>CRP</b>  | <b>CTE - AS</b>  | <b>CCSS</b>   | <b>ISTE</b>   |
| <ul style="list-style-type: none"> <li>a. <b>Demonstrate proper industry-specific safe work practices to prevent injury or illness.</b></li> <li>b. <b>Assess the potential impact of goal setting on personal and professional success.</b></li> <li>c. Describe the role of security and emergency procedures in workplace safety.</li> <li>d. Describe the effect of preventative measures on emergencies in the workplace.</li> <li>e. Identify and describe the causes, prevention, and treatment of common accidents.</li> <li>f. Identify local, state, and federal agencies that regulate workplace safety.</li> <li>g. Explain the role of the California Occupational Safety and Health Administration (Cal-OSHA) and the Environmental Protection Agency (EPA).</li> <li>h. Discuss the basics of system operations.</li> <li>i. Demonstrate the proper use of personal protective equipment (PPE).</li> <li>j. Explain the purpose of and accurately interpret a Safety Data Sheet (SDS).</li> <li>k. Identify hazardous materials and chemicals.</li> <li>l. Demonstrate proper procedures to respond to work-related accidents and injuries.</li> <li>m. Describe how ergonomics, housekeeping, and maintenance are related to accidents and injuries.</li> </ul> |                 | <u>2</u><br><u>5</u><br><u>6</u><br><u>8</u><br><u>12</u> | <u>2</u><br><u>5</u><br><u>6</u><br><u>7</u><br><u>8</u><br><u>10</u><br><u>11</u> | <u>LS</u><br><u>9-10</u><br><u>11-12.6</u><br><br><u>WS</u><br><u>11-12.7</u><br><u>11-12.6</u><br><br><u>SLS</u><br><u>9-10</u><br><u>11-12.1</u><br><u>11-12.1d</u> | <u>1a,d</u><br><u>2a,d</u><br><u>5b</u>                           |

| <p>n. Demonstrate cyber ethics, cyber safety, and cybersecurity.</p> <p>o. Assess the potential impact of preventative physical and mental health measures on workplace safety.</p>  |   |   |   |  |             |
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| <b>Medical Insurance Coding and Billing Specialist Units of Instruction</b>  |   |   |   |  |             |
| <b>7. Introduction to Health Information Careers</b>   | <b>CTE - PS</b>   | <b>CRP</b>  | <b>CTE - AS</b>   | <b>CCSS</b>  | <b>ISTE</b> |
| <p>a. <b>Demonstrate knowledge of roles and responsibilities of medical insurance, billing, and coding personnel within the health care industry.</b></p> <p>b. <b>Recognize how Electronic Health Records (EHR) have transformed the health care system.</b></p> <p>c. Identify employment opportunities for health information professionals.</p> <p>d. Recognize transferable skills that apply across the health care and insurance industries.</p> <p>e. Identify education, training, and industry-recognized certifications that support job growth and career progression.</p> <p>f. Discuss how electronic health records, health information systems, and billing technologies have transformed the health care system.</p> <p>g. Describe the personal and professional characteristics and attitudes required in health occupations.</p> <p>h. Discuss current trends in health care.</p>  | <a href="#">C2.4</a><br><a href="#">C5.0</a><br><a href="#">C5.1</a><br><a href="#">C9.4</a><br><a href="#">C16.1</a>                         | <a href="#">1</a><br><a href="#">2</a><br><a href="#">5</a><br><a href="#">11</a> | <a href="#">1</a><br><a href="#">2</a><br><a href="#">5</a><br><a href="#">11</a> | <a href="#">LS</a><br><a href="#">9-10</a><br><a href="#">11-12.6</a><br><br><a href="#">WS</a><br><a href="#">11-12.7</a> |             |
| <b>8. Health Information Management</b>  | <b>CTE - PS</b>   | <b>CRP</b>  | <b>CTE - AS</b>   | <b>CCSS</b>  | <b>ISTE</b> |
| <p>a. <b>Describe the function of health information management within the health care system.</b></p> <p>b. <b>Describe the purpose of medical billing and coding within health information management.</b></p> <p>c. <b>Explain Health Insurance Portability and Accountability Act (HIPAA) provisions related to medical insurance billing and coding.</b></p> <p>d. Describe the components of the medical record and describe methods used to store and retrieve health information.</p> <p>e. Discuss common methods of payment for health care services.</p> <p>f. Compare and contrast the main elements of common health insurance plans.</p> <p>g. Demonstrate an understanding of private insurance and methods of reimbursement.</p> <p>h. Demonstrate an understanding of capitation payment arrangements.</p> <p>i. Differentiate characteristics and purposes of Medicare parts A, B, C, and D.</p> <p>j. Identify the major aspects of a managed health care system.</p> <p>k. Differentiate between an HMO and a PPO.</p> | <a href="#">C1.3</a><br><a href="#">C1.4</a><br><a href="#">C1.7</a><br><a href="#">C2.2</a><br><a href="#">C9.0</a><br><a href="#">C15.2</a> | <a href="#">1</a><br><a href="#">2</a><br><a href="#">5</a><br><a href="#">11</a> | <a href="#">1</a><br><a href="#">2</a><br><a href="#">5</a><br><a href="#">11</a> | <a href="#">LS</a><br><a href="#">9-10</a><br><a href="#">11-12.6</a><br><br><a href="#">WS</a><br><a href="#">11-12.7</a> |             |
| <b>9. ICD-10-CM Coding</b>   | <b>CTE - PS</b>   | <b>CRP</b>  | <b>CTE - AS</b>   | <b>CCSS</b>  | <b>ISTE</b> |
| <p>a. <b>Define ICD-10-CM and explain its role in diagnosis coding and the health care industry.</b></p>   | <a href="#">B5.0</a><br><a href="#">B5.1</a>  | <a href="#">1</a><br><a href="#">2</a>  | <a href="#">1</a><br><a href="#">2</a>  | <a href="#">LS</a><br><a href="#">9-10</a>   |             |

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| <ul style="list-style-type: none"> <li>b. Identify how the ICD-10-CM is organized and how to use the Alphabetic Index and Tabular List.</li> <li>c. Explain how fonts, symbols and notations are interpreted in coding.</li> <li>d. Demonstrate use of the ICD-10-CM Official Guidelines for Coding and Reporting to code acute conditions, chronic conditions, integral conditions, and combination codes.</li> <li>e. Explain the function of the ICD-10-CM and how it has evolved.</li> <li>f. Describe the components of the ICD-10-CM and how it is organized.</li> <li>g. Demonstrate ability to utilize the ICD-10-CM Alphabetic Index and Tabular List.</li> <li>h. Demonstrate how to use main terms, sub terms and connecting words in the Alphabetic Index.</li> <li>i. Demonstrate how to report acute and chronic conditions.</li> <li>j. Differentiate between residual and late effects.</li> <li>k. Explain how to abstract documentation to determine whether a condition is documented as impending or threatened.</li> <li>l. Demonstrate the steps of proper code sequencing.</li> <li>m. Show an understanding of the Neoplasm Table.</li> <li>n. Use the External Causes Index to support accurate external cause coding when applicable.</li> <li>o. Correctly identify diagnoses in a case study.</li> <li>p. Practice the use of medical terminology and understand word parts.</li> <li>q. Explain the historical purpose of General Equivalence Mappings and recognize that current coding should be based on the applicable ICD-10-CM code set and guidelines.</li> </ul> | <a href="#">B5.5</a><br><a href="#">C15.0</a><br><a href="#">C15.4</a>                         | <a href="#">5</a><br><a href="#">6</a><br><a href="#">11</a>   | <a href="#">5</a><br><a href="#">6</a><br><a href="#">11</a>   | <a href="#">11-12.6</a><br><br><a href="#">RSTS</a><br><a href="#">9-10</a><br><a href="#">11-12.4</a><br><br><a href="#">WS</a><br><a href="#">11-12.7</a>   |             |
| <b>10. ICD-10-CM Reporting Guidelines for Outpatient Coding</b>   | <b>CTE - PS</b>  | <b>CRP</b>   | <b>CTE - AS</b>  | <b>CCSS</b>   | <b>ISTE</b> |
| <ul style="list-style-type: none"> <li>a. Apply ICD-10-CM Official Guidelines for Coding and Reporting to hospital outpatient services and provider-based office visits.</li> <li>b. Demonstrate use of the Alphabetic Index and Tabular List coding conventions in the proper sequence for diagnosis.</li> <li>c. Identify the function and uses of Z codes for outpatient visits, observations, and other applicable encounters.</li> <li>d. Differentiate coding for first-listed diagnoses, unconfirmed diagnoses, coexisting conditions, and chronic diseases.</li> <li>e. Describe the coding assignment for outpatient surgery, observation stays, and preoperative evaluations.</li> </ul>  | <a href="#">C15.0</a><br><a href="#">C15.4</a>   | <a href="#">1</a><br><a href="#">2</a><br><a href="#">5</a><br><a href="#">6</a><br><a href="#">11</a> | <a href="#">1</a><br><a href="#">2</a><br><a href="#">5</a><br><a href="#">6</a><br><a href="#">11</a> | <a href="#">LS</a><br><a href="#">9-10</a><br><a href="#">11-12.6</a><br><br><a href="#">RSTS</a><br><a href="#">9-10</a><br><a href="#">11-12.4</a><br><br><a href="#">WS</a><br><a href="#">11-12.7</a> |             |
| <b>11. Introduction to CPT and HCPCS Coding</b>   | <b>CTE - PS</b>  | <b>CRP</b>   | <b>CTE - AS</b>  | <b>CCSS</b>   | <b>ISTE</b> |
| <ul style="list-style-type: none"> <li>a. Differentiate between ICD-10-CM and CPT coding requirements.</li> <li>b. Describe the role of HIPAA code set standards and the Healthcare Common Procedure Coding System (HCPCS) in health care billing.</li> <li>c. Apply modifiers in coding.</li> <li>d. Describe the origins of the CPT manual and its role in medical billing and coding.</li> </ul>   | <a href="#">B6.6</a><br><a href="#">C1.4</a><br><a href="#">C15.0</a><br><a href="#">C15.5</a> | <a href="#">1</a><br><a href="#">2</a><br><a href="#">5</a><br><a href="#">6</a><br><a href="#">11</a> | <a href="#">1</a><br><a href="#">2</a><br><a href="#">5</a><br><a href="#">6</a><br><a href="#">11</a> | <a href="#">LS</a><br><a href="#">9-10</a><br><a href="#">11-12.6</a><br><br><a href="#">RSTS</a>   |             |

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| <ul style="list-style-type: none"> <li>e. Explain the significance of the current year's CPT manual vs. earlier editions.</li> <li>f. Identify and interpret the symbols used in the CPT manual.</li> <li>g. Identify the content of and how to use the CPT appendices.</li> <li>h. Demonstrate how to use and reference the major sections found in the CPT manual.</li> <li>i. Locate and accurately utilize the terms in the CPT index.</li> <li>j. Explain how appended modifiers are used.</li> <li>k. Describe the role of Medicare, Medicaid, and third-party payers in the use of HCPCS codes.</li> <li>l. Describe the function of CPT and HCPCS Level II codes.</li> <li>m. Describe how the HCPCS code is formatted and assign HCPCS codes properly.</li> <li>n. Demonstrate understanding of drug tables and fee schedule concepts used in billing and reimbursement.</li> <li>o. Understand the purpose of modifiers.</li> <li>p. Recognize modifiers used for preventive services and anesthesia coding.</li> </ul> |  |  |  | <a href="#">9-10</a><br><a href="#">11-12.4</a><br><br><a href="#">WS</a><br><a href="#">11-12.7</a>  |      |
| <b>12. Coding for Evaluation and Management (E/M) Services</b>  | CTE - PS   | CRP  | CTE - AS   | CCSS  | ISTE |
| <ul style="list-style-type: none"> <li>a. <b>Identify and differentiate key factors used in E/M code assignment.</b></li> <li>b. <b>Interpret code information for common E/M conditions.</b></li> <li>c. Explain key factors used in E/M code assignment.</li> <li>d. Differentiate between a new and an established patient.</li> <li>e. Differentiate between inpatient and outpatient.</li> <li>f. Analyze code information based on common E/M conditions.</li> <li>g. Demonstrate the ability to code E/M services.</li> <li>h. Understand coding specific to the eyes and ears.</li> <li>i. Understand the terminology associated with the eyes and ears.</li> <li>j. Interpret code information for common E/M conditions and explain its role in coding.</li> </ul>  | <a href="#">B5.0</a><br><a href="#">C15.0</a><br><a href="#">C15.4</a>   | <a href="#">1</a><br><a href="#">2</a><br><a href="#">5</a><br><a href="#">6</a><br><a href="#">11</a> | <a href="#">1</a><br><a href="#">2</a><br><a href="#">5</a><br><a href="#">6</a><br><a href="#">11</a> | <a href="#">LS</a><br><a href="#">9-10</a><br><a href="#">11-12.6</a><br><br><a href="#">RSTS</a><br><a href="#">9-10</a><br><a href="#">11-12.4</a><br><br><a href="#">WS</a><br><br><a href="#">11-12.7</a> |      |
| <b>13. Integumentary, Musculoskeletal, and Nervous Systems Coding</b>   | CTE - PS   | CRP  | CTE - AS   | CCSS  | ISTE |
| <ul style="list-style-type: none"> <li>a. <b>Describe the functions of the integumentary system and how services are reported with codes.</b></li> <li>b. <b>Differentiate the three major muscle types and identify disorders of the muscular system and how they are reported with codes.</b></li> <li>c. <b>Identify the components and basic operation of the nervous system and how disorders of the nervous system are reported with codes.</b></li> <li>d. Identify the elements of coding skin, subcutaneous, and accessory structure services.</li> <li>e. Describe the format of the Integumentary System in the CPT manual.</li> <li>f. Demonstrate proper use of terminology for the integumentary and musculoskeletal systems and coding.</li> <li>g. Demonstrate the ability to code integumentary services and procedures.</li> <li>h. Differentiate between fracture and dislocation treatment types and types of traction.</li> </ul>  | <a href="#">B2.0</a><br><a href="#">B2.1</a><br><a href="#">B5.0</a><br><a href="#">C6.4</a><br><a href="#">C15.0</a><br><a href="#">C15.4</a> | <a href="#">1</a><br><a href="#">2</a><br><a href="#">5</a><br><a href="#">6</a><br><a href="#">11</a> | <a href="#">1</a><br><a href="#">2</a><br><a href="#">5</a><br><a href="#">6</a><br><a href="#">11</a> | <a href="#">LS</a><br><a href="#">9-10</a><br><a href="#">11-12.6</a><br><br><a href="#">RSTS</a><br><a href="#">9-10</a><br><a href="#">11-12.4</a><br><br><a href="#">WS</a><br><a href="#">11-12.7</a>     |      |

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| <ul style="list-style-type: none"> <li>i. Identify services/procedures included in the General subheading.</li> <li>j. Understand elements of arthroscopic procedures.</li> <li>k. Demonstrate the ability to code musculoskeletal services and procedures.</li> <li>l. Describe various skin diseases, causative agents, and their related treatments.</li> <li>m. List and describe the layers of the skin and the healing process of the skin.</li> <li>n. Describe the structure and growth of hair and nails.</li> <li>o. Explain how the body regulates temperature through the integumentary system.</li> <li>p. Discuss the function of tendons and ligaments.</li> <li>q. Explain the difference between voluntary and involuntary muscles.</li> <li>r. Describe the various types of skeletal muscle movement.</li> <li>s. Identify and explain the components of a muscle cell.</li> <li>t. Describe the chemical activities required for muscle movement and neuromuscular transmission.</li> <li>u. Describe the role of nerves and how they function in the process of neuromuscular transmission.</li> <li>v. Demonstrate proper use of nervous system terminology and how to code nervous system services.</li> <li>w. Contrast the activity of cardiac, smooth, and skeletal muscle.</li> <li>x. Demonstrate understanding of the guidelines for the nervous system.</li> </ul> |  |  |  |   |      |
| <b>14. Respiratory and Cardiovascular Systems Coding</b>   | CTE - PS   | CRP  | CTE - AS   | CCSS  | ISTE |
| <ul style="list-style-type: none"> <li>a. Describe the functions of the respiratory and cardiovascular systems and how services are reported with codes.</li> <li>b. Differentiate between services reported from the respiratory system subsection and those reported with codes for other subsections.</li> <li>c. Demonstrate the ability to code cardiovascular services.</li> <li>d. Identify highlights of nasal procedural coding.</li> <li>e. Explain the structure of the trachea/bronchi codes.</li> <li>f. Correctly use respiratory terminology.</li> <li>g. Distinguish differences among codes assigned to report lung and pleura services and procedures.</li> <li>h. Understand cardiovascular services reported with codes from the Surgery, Medicine, and Radiology sections.</li> <li>i. Correctly use cardiovascular coding terminology.</li> <li>j. Identify the major rules of coding cardiovascular services using the Radiology section codes.</li> <li>k. Define rules of coding cardiovascular services when using codes from the Medicine section.</li> <li>l. Demonstrate the ability to code cardiovascular services.</li> </ul>  | <a href="#">B2.0</a><br><a href="#">B2.1</a><br><a href="#">B5.0</a><br><a href="#">C6.4</a><br><a href="#">C15.0</a><br><a href="#">C15.4</a> | <a href="#">1</a><br><a href="#">2</a><br><a href="#">5</a><br><a href="#">6</a><br><a href="#">11</a> | <a href="#">1</a><br><a href="#">2</a><br><a href="#">5</a><br><a href="#">6</a><br><a href="#">11</a> | <a href="#">LS</a><br><a href="#">9-10</a><br><a href="#">11-12.6</a><br><br><a href="#">RSTS</a><br><a href="#">9-10</a><br><a href="#">11-12.4</a><br><br><a href="#">WS</a><br><a href="#">11-12.7</a> |      |
| <b>15. Lymphatic, Digestive, and Endocrine Systems Coding</b>  | CTE - PS   | CRP  | CTE - AS   | CCSS  | ISTE |

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| <p>a. <b>Describe the functions of the lymphatic, digestive, and endocrine systems and how services are reported with codes.</b></p> <p>b. <b>Demonstrate the ability to accurately code lymphatic, digestive, and endocrine services.</b></p> <p>c. Explain the structure of the lymphatic, immune, and digestive systems.</p> <p>d. Correctly use medical terminology and coding terminology related to the lymphatic, digestive, and endocrine systems.</p> <p>e. Distinguish differences among codes assigned to upper and lower gastrointestinal system services and procedures.</p> <p>f. Understand Digestive services reported with codes from the Surgery, Medicine, and Radiology sections.</p> <p>g. Understand the format of the Digestive System subsection.</p> <p>h. Demonstrate the ability to code lymphatic services.</p> <p>i. Understand the Hemic and Lymphatic System subheadings.</p> <p>j. Report on procedures of the digestive system.</p> <p>k. Discuss the functions of the various endocrine glands.</p> <p>l. Explain common diseases of the endocrine system.</p> <p>m. Demonstrate the ability to code Endocrine services using coding guidelines.</p> | <p><a href="#">B2.0</a><br/><a href="#">B2.1</a><br/><a href="#">B5.0</a><br/><a href="#">C6.4</a><br/><a href="#">C15.0</a><br/><a href="#">C15.4</a></p>  | <p><u>1</u><br/><u>2</u><br/><u>5</u><br/><u>6</u><br/><u>11</u></p> | <p><u>1</u><br/><u>2</u><br/><u>5</u><br/><u>6</u><br/><u>11</u></p> | <p><a href="#">LS</a><br/><a href="#">9-10</a><br/><a href="#">11-12.6</a><br/><br/><a href="#">RSTS</a><br/><a href="#">9-10</a><br/><a href="#">11-12.4</a><br/><br/><a href="#">WS</a><br/><a href="#">11-12.7</a></p> |             |
| <p><b>16. Urinary and Reproductive System Coding</b></p>   | <p>CTE - PS</p>   | <p>CRP</p>   | <p>CTE - AS</p>  | <p>CCSS</p>   | <p>ISTE</p> |
| <p>a. <b>Describe the functions of the urinary and reproductive systems and how services are reported with codes.</b></p> <p>b. <b>Demonstrate the ability to accurately code urinary and reproductive services.</b></p> <p>c. <b>Demonstrate the ability to code maternity and delivery services.</b></p> <p>d. Understand the format and codes of the male genital system.</p> <p>e. Understand the format and codes of the urinary system subsection.</p> <p>f. Report services with male genital system codes.</p> <p>g. Describe reproductive services.</p> <p>h. Identify elements of the components coding with female genital system codes.</p> <p>i. Define services in the global maternity and delivery package.</p> <p>j. Understand the format of the maternity care and delivery subsection services.</p> <p>k. Demonstrate the ability to code female genital system, maternity care, and delivery subsections.</p> <p>l. Demonstrate proper use of reproductive and urinary terminology.</p>   | <p><a href="#">B2.0</a><br/><a href="#">B2.1</a><br/><a href="#">B5.0</a><br/><a href="#">C13.0</a><br/><a href="#">C15.0</a><br/><a href="#">C15.4</a></p> | <p><u>1</u><br/><u>2</u><br/><u>5</u><br/><u>6</u><br/><u>11</u></p> | <p><u>1</u><br/><u>2</u><br/><u>5</u><br/><u>6</u><br/><u>11</u></p> | <p><a href="#">LS</a><br/><a href="#">9-10</a><br/><a href="#">11-12.6</a><br/><br/><a href="#">RSTS</a><br/><a href="#">9-10</a><br/><a href="#">11-12.4</a><br/><br/><a href="#">WS</a><br/><a href="#">11-12.7</a></p> |             |
| <p><b>17. Radiology, Laboratory, and Medicine Coding</b></p>   | <p>CTE - PS</p>   | <p>CRP</p>   | <p>CTE - AS</p>  | <p>CCSS</p>   | <p>ISTE</p> |
| <p>a. <b>Describe the formats for the Pathology/Laboratory, Radiology, and Medicine sections.</b></p> <p>b. <b>Demonstrate the ability to accurately code allergy, immunology, and special services.</b></p> <p>c. Explain the format of the Pathology and Laboratory section.</p> <p>d. Demonstrate understanding of the information in the Pathology and Laboratory guidelines.</p>  | <p><a href="#">B5.0</a><br/><a href="#">C15.0</a><br/><a href="#">C15.4</a></p>   | <p><u>1</u><br/><u>2</u><br/><u>5</u><br/><u>6</u></p>               | <p><u>1</u><br/><u>2</u><br/><u>5</u><br/><u>6</u></p>               | <p><a href="#">LS</a><br/><a href="#">9-10</a><br/><a href="#">11-12.6</a></p>  |             |

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| <p>e. Demonstrate proper use of pathology, laboratory, and radiology terminology.</p> <p>f. Demonstrate the ability to code pathology and laboratory services.</p> <p>g. Identify elements of global procedures.</p> <p>h. Explain the format of the Radiology and Medicine sections.</p> <p>i. List the components of dialysis reporting.</p> <p>j. List the important elements of coding allergy and clinical immunology services.</p> <p>k. Understand non-face-to-face services.</p> <p>l. Code special services accurately.</p>  |  | <a href="#">11</a>   | <a href="#">11</a>   | <a href="#">RSTS</a><br><a href="#">9-10</a><br><a href="#">11-12.4</a><br><br><a href="#">WS</a><br><a href="#">11-12.7</a>  |             |
| <b>18. Introduction to CMS-1500 and UB-04 Claims and Explanation of Benefits</b>  | <b>CTE - PS</b>  | <b>CRP</b>   | <b>CTE - AS</b>  | <b>CCSS</b>   | <b>ISTE</b> |
| <p>a. <b>Describe the various formats and information listed in the Explanation of Benefits.</b></p> <p>b. Explain the field locators of the CMS-1500 and UB-04 claim forms.</p> <p>c. Understand the information required for a clean claim.</p> <p>d. Explain the function of a clearinghouse.</p> <p>e. Demonstrate procedures for claim preparation.</p> <p>f. Explain Medicare and Medicaid eligibility factors.</p> <p>g. Explain TRICARE.</p> <p>h. Interpret Medicare remittance advice.</p> <p>i. Interpret Explanation of Benefits.</p> <p>j. Differentiate the amount billed, amount allowed, adjustments, and payment amounts.</p> <p>k. Explain the reimbursement process.</p> <p>l. Describe how to document the information in the patient's record.</p> | <a href="#">C1.4</a><br><a href="#">C3.5</a><br><a href="#">C15.3</a><br><a href="#">C15.6</a> | <a href="#">1</a><br><a href="#">2</a><br><a href="#">5</a><br><a href="#">6</a><br><a href="#">11</a>                       | <a href="#">1</a><br><a href="#">2</a><br><a href="#">5</a><br><a href="#">6</a><br><a href="#">11</a>                       | <a href="#">LS</a><br><a href="#">9-10</a><br><a href="#">11-12.6</a><br><br><a href="#">RSTS</a><br><a href="#">9-10</a><br><a href="#">11-12.4</a><br><br><a href="#">WS</a><br><a href="#">11-12.7</a> |             |
| <b>19. Secondary Insurance</b>  | <b>CTE - PS</b>  | <b>CRP</b>   | <b>CTE - AS</b>  | <b>CCSS</b>   | <b>ISTE</b> |
| <p>a. <b>Describe the process for submitting a secondary insurance claim.</b></p> <p>b. Discuss the process and requirements for filing a secondary insurance claim, including the birthday rule, dependent coverage, and coordination of benefits.</p> <p>c. Explain the assignment of benefits.</p> <p>d. Accurately complete a claim form for secondary benefits.</p>  |  | <a href="#">1</a><br><a href="#">2</a><br><a href="#">5</a><br><a href="#">11</a>  | <a href="#">1</a><br><a href="#">2</a><br><a href="#">5</a><br><a href="#">11</a>  | <a href="#">LS</a><br><a href="#">9-10</a><br><a href="#">11-12.6</a><br><br><a href="#">WS</a><br><a href="#">11-12.7</a>  |             |
| <b>20. Ethics and Law for Healthcare Professionals</b>  | <b>CTE - PS</b>  | <b>CRP</b>   | <b>CTE - AS</b>  | <b>CCSS</b>   | <b>ISTE</b> |
| <p>a. <b>Understand what is meant by "ethical behavior" and its implications and practices in the health care industry and the field of medical billing and coding.</b></p> <p>b. Explain the Health Insurance Portability and Accountability Act (HIPAA) and what it means in relation to:</p> <ul style="list-style-type: none"> <li>Confidentiality</li> <li>Patient Safety and Security</li> </ul>  | <a href="#">B6.6</a><br><a href="#">B13.3</a><br><a href="#">C5.0</a><br><a href="#">C9.4</a>  | <a href="#">1</a><br><a href="#">2</a><br><a href="#">4</a><br><a href="#">5</a><br><a href="#">11</a><br><a href="#">12</a> | <a href="#">1</a><br><a href="#">2</a><br><a href="#">4</a><br><a href="#">5</a><br><a href="#">11</a><br><a href="#">12</a> | <a href="#">LS</a><br><a href="#">9-10</a><br><a href="#">11-12.6</a><br><br><a href="#">WS</a><br><a href="#">11-12.6</a>  |             |

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| <ul style="list-style-type: none"> <li>• Privacy</li> <li>c. Explain the consequences of violating HIPAA laws.</li> <li>d. Explain procedures and legal requirements for releasing medical information.</li> <li>e. Compare confidentiality and data security issues related to paper-based and electronic health records.</li> <li>f. Explain how reimbursements are related to medical ethics and laws.</li> <li>g. Describe the impact of technology in medical ethics, medical billing, and coding.</li> <li>h. Summarize patients' rights related to receiving health care and managing their health information.</li> <li>i. Demonstrate professional standards for working with patients in a culturally diverse society.</li> </ul> |  |  |  | <a href="#">11-12.7</a> |  |
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## **Standards Alignment**

The curricula have been aligned with the CTE Model Curriculum Standards released in 2013. Each industry sector was updated to meet the increased rigor and relevancy requirements of the Common Core State Standards. The curriculum also includes the new Standards for Career Ready Practices.

### Standards for Career Ready Practice

1. *Apply appropriate technical skills and academic knowledge.*
2. *Communicate clearly, effectively, and with reason.*
3. *Develop an education and career plan aligned with personal goals.*
4. *Apply technology to enhance productivity.*
5. *Utilize critical thinking to make sense of problems and persevere in solving them.*
6. *Practice personal health and understand financial literacy.*
7. *Act as a responsible citizen in the workplace and the community.*
8. *Model integrity, ethical leadership, and effective management.*
9. *Work productively in teams while integrating cultural and global competence.*
10. *Demonstrate creativity and innovation.*
11. *Employ valid and reliable research strategies.*
12. *Understand the environmental, social, and economic impacts of decisions.*

## CTE Anchor Standards—Common Core English Language Arts Alignment

### *Anchor Standard 1: Academics*

Analyze and apply appropriate academic standards required for successful industry sector pathway completion leading to postsecondary education and employment. Refer to the industry sector alignment matrix for identification of standards. Note: alignment listed within each sector.

### *Anchor Standard 2: Communications*

Language Standard: Acquire and accurately use general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the (career and college) readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression. LS 9-10, 11-12.6

### *Anchor Standard 3: Career Planning and Management*

Speaking and Listening Standard: Integrate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, orally) in order to make informed decisions and solve problems, evaluating the credibility and accuracy of each source and noting any discrepancies among the data. SLS 11-12.2

### *Anchor Standard 4: Technology*

Writing Standard: Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments and information.

### *Anchor Standard 5: Problem Solving and Critical Thinking*

Writing Standard: Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem, narrow or broaden the inquiry when appropriate, and synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. WS 11-12.7

### *Anchor Standard 6: Health and Safety*

Reading Standards for Science and Technical Subjects: Determine the meaning of symbols, keywords, and other domain-specific words and phrases as they are used in a specific scientific or technical context. RSTS 9-10, 11-12.4

### *Anchor Standard 7: Responsibility and Flexibility*

Speaking and Listening Standard: Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners, building on others' ideas and expressing their own clearly and persuasively. SLS 9-10, 11-12.1

### *Anchor Standard 8: Ethics and Legal Responsibilities*

Speaking and Listening Standard: Respond thoughtfully to diverse perspectives; synthesize comments, claims, and evidence made on all sides of an issue; resolve contradictions when possible; and determine what additional information or research is required to deepen the investigation or complete the work. SLS 11-12.1d

### *Anchor Standard 9: Leadership and Teamwork*

Speaking and Listening Standard: Work with peers to promote civil, democratic discussions and decision making; set clear goals and deadlines; and establish individual roles as needed. SLS 11-12.1b

### *Anchor Standard 10: Technical Knowledge and Skills*

Writing Standard: Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information. WS 11-12.6

### *Anchor Standard 11: Demonstration and Application*

Demonstrate and apply the knowledge and skills contained in the industry-sector anchor standards, pathway standards, and performance indicators in the classroom, laboratory, and workplace settings, and the career technical student organization. Note: no alignment evident for this standard. WS 11-12.6

## CTE Model Curriculum Standards—Industry Sectors and Pathways

### HSMT: Health Science and Medical Technology

#### **B. Patient Care Pathway**

- B2.0 *Understand the basic structure and function of the human body and relate normal function to common disorders.*
- B2.1 *Know basic human body structure and function in relationship to specific care between prevention, diagnosis, pathology, and treatment.*
- B5.0 *Know the definition, spelling, pronunciation, and use of appropriate terminology in the health care setting.*
- B5.1 *Use medical terminology in patient care appropriate to communicate information and observations.*
- B5.5 *Know the basic structure of medical terms.*
- B6.6 *Maintain written guidelines of the Health Insurance Portability and Accountability Act (HIPAA) in all communications.*

#### **C. Care Administrative Services Pathway**

- C1.3 *Recognize the different general methods of funding health care (e.g., out-of-pocket payments, health insurance, government funding, charities).*
- C1.4 *Recognize major specific payment systems (e.g., Medicare, Medicaid, Workers Compensation).*
- C1.7 *Understand common U.S. models for structuring health care funding (e.g., Health Maintenance Organizations [HMOs], Preferred Provider Organization PPOs Managed Care Organization [MCOs], and Independent Physician Association [IPAs]).*
- C2.2 *Describe common medical record documentation formats (e.g., Subjective, Objective, Assessment, and Plan [SOAP] notes, admission notes).*
- C2.4 *Understand the difference between different patient care provider and support roles (e.g., health care administrator, clinical data specialist, health informatics technician, and billing and coding specialist)*
- C3.5 *Perform differential reimbursement calculations by payers (e.g., Medicare/Medicaid, self-pay, managed care) and describe the major principles of health insurance.*
- C5.0 *Understand and maintain standards of excellence, professional, ethical, and moral conduct required in management of personnel and policy within the health care delivery system*
- C5.1 *Understand the alignment of personal and organizational conduct management with ethical and professional standards.*
- C6.4 *Demonstrate effective teamwork and critical analysis applying conflict-resolution techniques.*
- C9.0 *Use an electronic health care patient information system to optimize the acquisition, storage, retrieval, and use of information in health and biomedicine.*
- C9.4 *Compose a rationale that compares and contrasts the relative advantages and disadvantages of paper versus electronic records.*
- C13.0 *Understand the need to communicate health/medical information accurately and within legal/ regulatory bounds across the organization.*
- C13.3 *Develop ethnographic skills, by location and information retrieval, carefully observe social behavior, and manage stress and time.*
- C15.0 *Code health information and bill payers using industry standard methods of classification of diseases, current procedural terminology, and common health care procedure coding system*
- C15.2 *Understand medical record documentation (e.g., chart notes, injections, medications, lab reports).*
- C15.3 *Synthesize required information from a medical record and other medical documents for a variety of purposes upon regulatory or legal request.*
- C15.4 *Translate code services (e.g., diagnostic procedures, surgeries) using industry standard methods (e.g., International Classification of Diseases-ninth Ed. [ICD-9], Current Procedural Terminology-fourth Ed. [CPT-4], Healthcare Common Procedure Coding System [HCPCS]).*
- C15.5 *Demonstrate how to bill third-party payers (e.g., insurance companies, Medicare).*
- C15.6 *Receive and process information from third-party payers (e.g., Explanation of Benefits [EOB], Remittance Advice).*
- C16.1 *Learn new knowledge and skills regularly (e.g., on-the-job-training [OJT], continuing education).*

## ISTE Standards for Students

**1. Empowered Learner-** Students leverage technology to take an active role in choosing, achieving, and demonstrating competency in their learning goals, informed by the learning sciences.

*a) Students articulate and set personal learning goals, develop strategies leveraging technology to achieve them, and reflect on the learning process itself to improve learning outcomes.*

*b) Students build networks and customize their learning environments in ways that support the learning process.*

*c) Students use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways*

*d) Students understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge to explore emerging technologies.*

**2. Digital Citizen-** Students recognize the rights, responsibilities, and opportunities of living, learning, and working in an interconnected digital world, and they act and model in ways that are safe, legal, and ethical.

*a) Students cultivate and manage their digital identity and reputation and are aware of the permanence of their actions in the digital world.*

*b) Students engage in positive, safe, legal, and ethical behavior when using technology, including social interactions online or when using networked devices.*

*c) Students demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.*

*d) Students manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.*

**3. Knowledge Constructor-** Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts, and make meaningful learning experiences for themselves and others.

*a) Students plan and employ effective research strategies to locate information and other resources for their intellectual or creative pursuits.*

*b) Students evaluate the accuracy, perspective, credibility, and relevance of information, media, data, or other resources.*

*c) Students curate information from digital resources using a variety of tools and methods to create collections of artifacts that demonstrate meaningful connections or conclusions.*

*d) Students build knowledge by actively exploring real-world issues and problems, developing ideas and theories, and pursuing answers and solutions.*

**4. Innovative Designer-** Students use a variety of technologies within a design process to identify and solve problems creating new, useful, or imaginative solutions.

*a) Students know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts, or solving authentic problems.*

*b) Students select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.*

*c) Students develop, test, and refine prototypes as part of a cyclical design process.*

*d) Students exhibit a tolerance for ambiguity, perseverance, and the capacity to work with open-ended problems.*

**5. Computational Thinker-** Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.

*a) Students formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models, and algorithmic thinking in exploring and finding solutions.*

*b) Students collect data or identify relevant data sets, use digital tools to analyze them, and represent data in various ways to facilitate problem-solving and decision-making.*

*c) Students break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.*

*d) Students understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.*

**6. Creative Communicator-** Students communicate clearly and express themselves creatively for a variety of purposes using platforms, tools, styles, formats, and digital media appropriate for their goals.

*a) Students choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication.*

*b) Students create original works or responsibly repurpose or remix digital resources into new creations.*

*c) Students communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models, or simulations.*

*d) Students publish or present content that customizes the message and medium for their intended audiences.*

**7. Global Collaborator-** Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally.

*a) Students use digital tools to connect with learners from a variety of backgrounds and cultures, engaging with them in ways that broaden mutual understanding and learning.*

*b) Students use collaborative technologies to work with others, including peers, experts, or community members, to examine issues and problems from multiple viewpoints.*

*c) Students contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.*

*d) Students explore local and global issues and use collaborative technologies to work with others to investigate solutions.*