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| **TACOMA COMMUNITY COLLEGEOutcome Map** **Course:** LS 101 |
| **Course Outcomes**  | **PLO**  | **DLO**  |
| 1. Follow a plan for finding information using a variety of electronic and print tools.  | 2. Select appropriate sources based upon information need and context. | COK, CRT, IIT |
| 2. Employ strategic processes of inquiry to guide and refine information needs and search strategies.  | 1. Employ strategic processes of inquiry to guide and refine information needs and search strategies.  | COK, IIT |
| 3. Demonstrate basic use of electronic search strategies.  | 5. Demonstrate the effective use of electronic search strategies. | COK, IIT |
| 4. Describe the purpose of and collect the elements necessary for a citation in a standard style.  | 3. Use information ethically by citing sources in a standard citation style, with minimal errors. | COK, IIT, RES |
| 5. Develop familiarity with sources of evidence, methods, and modes of discourse.  | 4. Practice synthesizing information from more than one source into a new information product. | COK, COM, CRT, IIT, LWC, RES |
| 6. Identify and explain the differences between major types of information resources (e.g., books, lay periodicals, scholarly journals, wikis, etc.)and when and how to use them.  | 2. Select appropriate sources based upon information need and context. | COK, CRT, IIT |
| **TACOMA COMMUNITY COLLEGEOutcome Map** **Course:** MATH 095 |
| **Course Outcomes**  | **PLO**  | **DLO**  |
| 1. Use function notation.  | 4. Communicate mathematical information formally, using appropriate math notation and terminology, and informally by using everyday language to express ideas | COK, COM |
| 2. Use linear functions to model situations and solve problems algebraically, graphically, and numerically.  | 1. Interpret, analyze, and create graphs and charts that communicate quantitative or relational information2. Determine, create, and use appropriate and reasonable mathematical constructs to model, understand, and explain phenomena encountered in the world3. Determine and carry out an appropriate algorithm to solve problems that are amenable to mathematical solutions4. Communicate mathematical information formally, using appropriate math notation and terminology, and informally by using everyday language to express ideas  | COK, COM, CRTCOK, COM, CRTCOK, CRTCOK, COM |
| 3. Solve and graph systems of linear equations and inequalities in two unknowns.  | 1. Interpret, analyze, and create graphs and charts that communicate quantitative or relational information3. Determine and carry out an appropriate algorithm to solve problems that are amenable to mathematical solutions 4. Communicate mathematical information formally, using appropriate math notation and terminology, and informally by using everyday language to express ideas | COK, COM, CRTCOK, CRTCOK, COM |
| 4. Use integer and rational exponents and scientific notation.  | 3. Determine and carry out an appropriate algorithm to solve problems that are amenable to mathematical solutions 4. Communicate mathematical information formally, using appropriate math notation and terminology, and informally by using everyday language to express ideas5. Use technology to analyze and solve mathematical problems and to effectively communicate solutions to problems, particularly those that cannot be solved efficiently by other means | COK, CRTCOK, COMCOK, COM, CRT, IIT |
| 5. Demonstrate an understanding of quadratic, exponential, and logarithmic functions from algebraic, graphical, and numerical perspectives.  | 1. Interpret, analyze, and create graphs and charts that communicate quantitative or relational information3. Determine and carry out an appropriate algorithm to solve problems that are amenable to mathematical solutions 4. Communicate mathematical information formally, using appropriate math notation and terminology, and informally by using everyday language to express ideas | COK, CRTCOK, COM, CRTCOK, COM |
| 6. Use the algebra of radical expressions.  | 3. Determine and carry out an appropriate algorithm to solve problems that are amenable to mathematical solutions4. Communicate mathematical information formally, using appropriate math notation and terminology, and informally by using everyday language to express ideas | COK, CRTCOK, COM |
| 7. Use and interpret the above concepts in real world applications.  | 1. Interpret, analyze, and create graphs and charts that communicate quantitative or relational information2. Determine, create, and use appropriate and reasonable mathematical constructs to model, understand, and explain phenomena encountered in the world3. Determine and carry out an appropriate algorithm to solve problems that are amenable to mathematical solutions4. Communicate mathematical information formally, using appropriate math notation and terminology, and informally by using everyday language to express ideas5. Use technology to analyze and solve mathematical problems and to effectively communicate solutions to problems, particularly those that cannot be solved efficiently by other means  | COK, COM, CRTCOK, COM, CRTCOK, CRTCOK, COMCOK, COM, CRT, IIT |
| 8. Write clear and complete solutions to mathematical problems, including correct notation and written explanations when appropriate.  | 4. Communicate mathematical information formally, using appropriate math notation and terminology, and informally by using everyday language to express ideas | COK, COM |
| 9. Use a scientific calculator appropriately.  | 5. Use technology to analyze and solve mathematical problems and to effectively communicate solutions to problems, particularly those that cannot be solved efficiently by other means | COK, COM, CRT, IIT |
| **TACOMA COMMUNITY COLLEGEOutcome Map** **Course:** ABE 070 |
| **Course Outcomes**  | **PLO**  | **DLO**  |
| 1. Evaluate information scientifically in the context of his/her own life.  | 1. Demonstrate academic reading, math, and written and oral communication skills through metacognition and the development of critical thinking and comprehension strategies.2. Recognize themselves as learners and citizens capable of accomplishing their academic and professional goals and contributing to the larger community.3. Engage in campus activities, utilize campus resources, and demonstrate the ability to transition to and navigate academic and professional environments.  | COK, COM, CRTCOM, CRT, LWC, RESCOM, IIT, LWC |
| 2. Perform scientific investigations in a lab setting, gather, analyze and critically evaluate scientific data, and communicate scientific results according to appropriate academic standards.  | 1. Demonstrate academic reading, math, and written and oral communication skills through metacognition and the development of critical thinking and comprehension strategies.5. Use interpersonal skills and strategies in a multicultural context to work collaboratively, solve problems, and perform tasks. | COK, COM, CRTLWC, RES |
| 3. Evaluate the dimensions of health, including the basic principles of genetics and hereditary, and relate it to personal health behaviors.  | 1. Demonstrate academic reading, math, and written and oral communication skills through metacognition and the development of critical thinking and comprehension strategies.3. Engage in campus activities, utilize campus resources, and demonstrate the ability to transition to and navigate academic and professional environments. | COK, COM, CRTCOM, IIT, LWC |
| 4. Identify basic body systems and use basic medical terminology.  | 1. Demonstrate academic reading, math, and written and oral communication skills through metacognition and the development of critical thinking and comprehension strategies.  | COK, COM, CRT |
| 5. Evaluate nutritional and environmental factors affecting growth, development, and wellness.  | 1. Demonstrate academic reading, math, and written and oral communication skills through metacognition and the development of critical thinking and comprehension strategies.2. Recognize themselves as learners and citizens capable of accomplishing their academic and professional goals and contributing to the larger community.  | COK, COM, CRTCOM, CRT, LWC, RES |
| 6. Evaluate health risks associated with certain occupational, residential, and recreational choices.  | 1. Demonstrate academic reading, math, and written and oral communication skills through metacognition and the development of critical thinking and comprehension strategies.  | COK, COM, CRT |
| 7. Identify community health resources.  | 1. Demonstrate academic reading, math, and written and oral communication skills through metacognition and the development of critical thinking and comprehension strategies.3. Engage in campus activities, utilize campus resources, and demonstrate the ability to transition to and navigate academic and professional environments. | COK, COM, CRTCOM, IIT, LWC |
| 8. Interpret and explain basic data represented in graphs and charts.  | 1. Demonstrate academic reading, math, and written and oral communication skills through metacognition and the development of critical thinking and comprehension strategies.  | COK, COM, CRT |
| 9. Utilize academic research skills; such as evaluate the quality/credibility of information from various kinds of sources, narrow topics and discern the most important information from texts.  | 1. Demonstrate academic reading, math, and written and oral communication skills through metacognition and the development of critical thinking and comprehension strategies.3. Engage in campus activities, utilize campus resources, and demonstrate the ability to transition to and navigate academic and professional environments. 4. Demonstrate an increase in computer literacy and proficiency in using technology for academic and professional purposes. | COK, COM, CRTCOM, IIT, LWCIIT |
| 10. Employ strategies to build and retain vocabulary.  | 1. Demonstrate academic reading, math, and written and oral communication skills through metacognition and the development of critical thinking and comprehension strategies.  | COK, COM, CRT |
| 11. Identify how authors organize text both written and oral and use vocabulary for specific purposes and audiences, and apply these strategies to their own academic writing and speaking.  | 1. Demonstrate academic reading, math, and written and oral communication skills through metacognition and the development of critical thinking and comprehension strategies.  | COK, COM, CRT |
| 12. Utilize the writing process to write academic paragraphs building towards academic essays and lab reports.  | 1. Demonstrate academic reading, math, and written and oral communication skills through metacognition and the development of critical thinking and comprehension strategies.  | COK, COM, CRT |
| 13. Improve sentence clarity and structure by addressing errors in the context of their own writing.  | 1. Demonstrate academic reading, math, and written and oral communication skills through metacognition and the development of critical thinking and comprehension strategies.  | COK, COM, CRT |
| 14. Use computer skills/programs for academic purposes such as word processing, email, and learning management systems as well as applying information technology to increase background knowledge, access new information and enhance scholarship.  | 3. Engage in campus activities, utilize campus resources, and demonstrate the ability to transition to and navigate academic and professional environments.4. Demonstrate an increase in computer literacy and proficiency in using technology for academic and professional purposes. | COM, IIT, LWCIIT |
| 15. Compile evidence through a reflective portfolio assessment process which documents academic growth, increased proficiency in, and knowledge of content area skills.  | 1. Demonstrate academic reading, math, and written and oral communication skills through metacognition and the development of critical thinking and comprehension strategies.2. Recognize themselves as learners and citizens capable of accomplishing their academic and professional goals and contributing to the larger community.3. Engage in campus activities, utilize campus resources, and demonstrate the ability to transition to and navigate academic and professional environments.  | COK, COM, CRTCOM, CRT, LWC, RESCOM, IIT, LWC |
| **TACOMA COMMUNITY COLLEGEOutcome Map** **Course:** ABE 082 |
| **Course Outcomes**  | **PLO**  | **DLO**  |
| 1. Identify place value system to millions and decimals to thousandths. (5.NBT.3)  | 1. Demonstrate academic reading, math, and written and oral communication skills through metacognition and the development of critical thinking and comprehension strategies.  | COK, COM, CRT |
| 2. Represent and solve problems involving addition, subtraction, multiplication and division of whole numbers. (2.OA.1, 3.OA.1)  | 1. Demonstrate academic reading, math, and written and oral communication skills through metacognition and the development of critical thinking and comprehension strategies.  | COK, COM, CRT |
| 3. Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. (3.OA.8)  | 1. Demonstrate academic reading, math, and written and oral communication skills through metacognition and the development of critical thinking and comprehension strategies.  | COK, COM, CRT |
| 4. Add, subtract, multiply and divide decimals to the hundredths including applications involving financial literacy. (5.NBT.7)  | 1. Demonstrate academic reading, math, and written and oral communication skills through metacognition and the development of critical thinking and comprehension strategies.  | COK, COM, CRT |
| 5. Evaluate fractions by reading, writing, reducing, and comparing benchmark fractions. Change mixed numbers to improper and vice versa and find equivalent fractions. (3.NF.2, 3.NF.3)  | 1. Demonstrate academic reading, math, and written and oral communication skills through metacognition and the development of critical thinking and comprehension strategies.  | COK, COM, CRT |
| 6. Add and subtract fractions and mixed numbers with like denominators and apply to real life applications. (4.NF.3c, 4.NF.3d)  | 1. Demonstrate academic reading, math, and written and oral communication skills through metacognition and the development of critical thinking and comprehension strategies.  | COK, COM, CRT |
| 7. Multiply and divide benchmark fractions by fractions, whole numbers and mixed numbers and solve related real life application problems. (5.NF.3, 5.NF.4, 5.NF.5, 5.NF.6, 5.NF.7)  | 1. Demonstrate academic reading, math, and written and oral communication skills through metacognition and the development of critical thinking and comprehension strategies.  | COK, COM, CRT |
| 8. Solve real world and mathematical problems involving area and perimeter of squares, rectangles and triangles.(6.G.1, 3.MD.7, 3.MD.8)  | 1. Demonstrate academic reading, math, and written and oral communication skills through metacognition and the development of critical thinking and comprehension strategies.  | COK, COM, CRT |
| 9. Represent and interpret data including mean, median, mode, and range using a line and bar graph. (5.MD.2)  | 1. Demonstrate academic reading, math, and written and oral communication skills through metacognition and the development of critical thinking and comprehension strategies.  | COK, COM, CRT |
| 10. Apply arithmetic to algebraic expressions by writing, interpreting and evaluating numerical expressions involving whole number exponents and order of operations. (5.OA.1, 6.EE.2)  | 1. Demonstrate academic reading, math, and written and oral communication skills through metacognition and the development of critical thinking and comprehension strategies.  | COK, COM, CRT |
| 11. Evaluate positive and negative numbers. Use positive and negative numbers to represent quantities in real world contexts.(6.NS.6a)  | 1. Demonstrate academic reading, math, and written and oral communication skills through metacognition and the development of critical thinking and comprehension strategies.  | COK, COM, CRT |
| 12. Solve whole number single variable equations using the four operations. Use substitution to determine whether a given number makes an equation true.(6.EE.5)  | 1. Demonstrate academic reading, math, and written and oral communication skills through metacognition and the development of critical thinking and comprehension strategies.  | COK, COM, CRT |
| 13. Use a scientific calculator appropriately.  | 4. Demonstrate an increase in computer literacy and proficiency in using technology for academic and professional purposes. | IIT |
| 14. Access additional math resources through the Internet, campus tutoring services, faculty office hours, and/or study groups to facilitate learning.  | 3. Engage in campus activities, utilize campus resources, and demonstrate the ability to transition to and navigate academic and professional environments. 4. Demonstrate an increase in computer literacy and proficiency in using technology for academic and professional purposes.5. Use interpersonal skills and strategies in a multicultural context to work collaboratively, solve problems, and perform tasks. | COM, IIT, LWCIITLWC, RES |
| 15. Write clear and complete solutions to mathematical problems, including correct notation and written explanations when appropriate.  | 1. Demonstrate academic reading, math, and written and oral communication skills through metacognition and the development of critical thinking and comprehension strategies.  | COK, COM, CRT |
| **TACOMA COMMUNITY COLLEGEOutcome Map** **Course:** ASTR& 101 |
| **Course Outcomes**  | **PLO**  | **DLO**  |
| 1. Explain the Earth?s motions through space.  | 3. Communicate the primary principles and processes underlying at least one natural system (for example: atoms and molecules, cells and organisms, the oceans and atmosphere, the solid earth, or the cosmos) | COK, COM, CRT |
| 2. Summarize a brief history of Astronomy, including the Copernican revolution.  | 3. Communicate the primary principles and processes underlying at least one natural system (for example: atoms and molecules, cells and organisms, the oceans and atmosphere, the solid earth, or the cosmos) | COK, COM, CRT |
| 3. Explain the nature of light, including light spectra and how the uses of spectra enable us to understand the universe.  | 3. Communicate the primary principles and processes underlying at least one natural system (for example: atoms and molecules, cells and organisms, the oceans and atmosphere, the solid earth, or the cosmos) | COK, COM, CRT |
| 4. Describe the different types of telescopes used for different regions of the electromagnetic spectrum.  | 3. Communicate the primary principles and processes underlying at least one natural system (for example: atoms and molecules, cells and organisms, the oceans and atmosphere, the solid earth, or the cosmos) | COK, COM, CRT |
| 5. Summarize the motions and appearance of the nighttime sky.  | 3. Communicate the primary principles and processes underlying at least one natural system (for example: atoms and molecules, cells and organisms, the oceans and atmosphere, the solid earth, or the cosmos) | COK, COM, CRT |
| 6. Explain the current theories of formation and characteristics of the solar system, including the planets, moons, asteroids, and comets.  | 3. Communicate the primary principles and processes underlying at least one natural system (for example: atoms and molecules, cells and organisms, the oceans and atmosphere, the solid earth, or the cosmos) | COK, COM, CRT |
| 7. Classify the properties of stars, including star types and the Hertzprung-Russell Diagram.  | 3. Communicate the primary principles and processes underlying at least one natural system (for example: atoms and molecules, cells and organisms, the oceans and atmosphere, the solid earth, or the cosmos) | COK, COM, CRT |
| 8. Explain the current theories of star formation and stellar evolution.  | 3. Communicate the primary principles and processes underlying at least one natural system (for example: atoms and molecules, cells and organisms, the oceans and atmosphere, the solid earth, or the cosmos) | COK, COM, CRT |
| 9. Classify the different types and outcomes of star death, including the mass dependence.  | 3. Communicate the primary principles and processes underlying at least one natural system (for example: atoms and molecules, cells and organisms, the oceans and atmosphere, the solid earth, or the cosmos) | COK, COM, CRT |
| 10. Demonstrate understanding of the scientific method and its use in the field of Astronomy.  | 2. Explain the importance of observation and hypothesis testing in the scientific process, and distinguish between the scientific process and other human endeavors | COK, COM, CRT |
| 11. Explain the theories of the composition, structure, and behavior of the universe.  | 3. Communicate the primary principles and processes underlying at least one natural system (for example: atoms and molecules, cells and organisms, the oceans and atmosphere, the solid earth, or the cosmos)4. Perform and effectively communicate the results of scientific investigations, and explain how research is done in science | COK, COM, CRTCOK, COM, CRT, IIT, LWC |
| 12. Analyze astronomical data and use it to draw scientific conclusions.  | 3. Communicate the primary principles and processes underlying at least one natural system (for example: atoms and molecules, cells and organisms, the oceans and atmosphere, the solid earth, or the cosmos)4. Perform and effectively communicate the results of scientific investigations, and explain how research is done in science | COK, COM, CRTCOK, COM, CRT, IIT, LWC |
| **TACOMA COMMUNITY COLLEGEOutcome Map** **Course:** CMST 110 |
| **Course Outcomes**  | **PLO**  | **DLO**  |
| 1. Recognize the significance of engaging in a cultural study.  | 3. Read critically and research effectively to support thesis | COK, CRT, IIT |
| 2. Explain the characteristics of cultural communication patterns.  | 1. Craft, develop, and support a specific, debatable thesis3. Read critically and research effectively to support thesis | COK, COM, CRTCOK, CRT, IIT |
| 3. Identify and describe characteristics of cultural communication patterns.  | 3. Read critically and research effectively to support thesis 4. Use appropriate writing and/or communication strategies, standard grammar, and academic documentation conventions5. Demonstrate ethical standards in all phases of the writing and/or communication process to include using collaboration within academically appropriate guidelines | COK, CRT, IITCOK, COMLWC, RES |
| 4. Recognize factors that shape local, regional, national, and international cultures.  | 3. Read critically and research effectively to support thesis4. Use appropriate writing and/or communication strategies, standard grammar, and academic documentation conventions | COK, CRT, IITCOK, COM |
| 5. Explain how public and private organizations function as cultures in the U.S. and abroad.  | 2. Draft and refine a well-organized essay, speech, or other forms of communication appropriate to context and audience3. Read critically and research effectively to support thesis4. Use appropriate writing and/or communication strategies, standard grammar, and academic documentation conventions 5. Demonstrate ethical standards in all phases of the writing and/or communication process to include using collaboration within academically appropriate guidelines | COK, COM, CRTCOK, CRT, IITCOK, COMLWC, RES |
| **TACOMA COMMUNITY COLLEGEOutcome Map** **Course:** ENGL& 235 |
| **Course Outcomes**  | **PLO**  | **DLO**  |
| 1. Develop an understanding of the nature and substance of technical reports.  | 1. Craft, develop, and support a specific, debatable thesis3. Read critically and research effectively to support thesis4. Use appropriate writing and/or communication strategies, standard grammar, and academic documentation conventions 5. Demonstrate ethical standards in all phases of the writing and/or communication process to include using collaboration within academically appropriate guidelines | COK, CRT, IITCOK, COMLWC, RESCOK, COM, CRT |
| 2. Develop an understanding of the qualities and elements that go into good business and science reports.  | 2. Draft and refine a well-organized essay, speech, or other forms of communication appropriate to context and audience3. Read critically and research effectively to support thesis 4. Use appropriate writing and/or communication strategies, standard grammar, and academic documentation conventions | COK, COM, CRTCOK, CRT, IITCOK, COM |
| 3. Organize and prepare various types of technical writing, including reports, technical descriptions, proposals, and feasibility studies.  | 1. Craft, develop, and support a specific, debatable thesis4. Use appropriate writing and/or communication strategies, standard grammar, and academic documentation conventions5. Demonstrate ethical standards in all phases of the writing and/or communication process to include using collaboration within academically appropriate guidelines | COK, COM, CRTCOK, COMLWC, RES |
| 4. Use current technology to gather, evaluate, and analyze information.  | 3. Read critically and research effectively to support thesis 4. Use appropriate writing and/or communication strategies, standard grammar, and academic documentation conventions5. Demonstrate ethical standards in all phases of the writing and/or communication process to include using collaboration within academically appropriate guidelines | COK, CRT, IITCOK, COMLWC, RES |
| 5. Write clearly, effectively, and concisely.  | 1. Craft, develop, and support a specific, debatable thesis2. Draft and refine a well-organized essay, speech, or other forms of communication appropriate to context and audience  | COK, COM, CRTCOK, COM, CRT |
| **TACOMA COMMUNITY COLLEGEOutcome Map** **Course:** BIOL& 175 |
| **Course Outcomes**  | **PLO**  | **DLO**  |
| 1. Identify the organs and basic functions of the following organ systems: integumentary, skeletal, muscular, nervous, endocrine, cardiovascular, immune, respiratory, digestive, urinary and reproductive.  | 3. Communicate the primary principles and processes underlying at least one natural system (for example: atoms and molecules, cells and organisms, the oceans and atmosphere, the solid earth, or the cosmos) | COK, COM, CRT |
| 2. Describe the levels of biological organization (including the chemical, cellular, tissue, organ and systems levels) as they apply to the structure and function of the human body.  | 3. Communicate the primary principles and processes underlying at least one natural system (for example: atoms and molecules, cells and organisms, the oceans and atmosphere, the solid earth, or the cosmos) | COK, COM, CRT |
| 3. Define homeostasis and recognize examples in the human body.  | 3. Communicate the primary principles and processes underlying at least one natural system (for example: atoms and molecules, cells and organisms, the oceans and atmosphere, the solid earth, or the cosmos) | COK, COM, CRT |
| 4. State anatomical relationships in scientific terms.  | 3. Communicate the primary principles and processes underlying at least one natural system (for example: atoms and molecules, cells and organisms, the oceans and atmosphere, the solid earth, or the cosmos) | COK, COM, CRT |
| 5. Discuss the biomolecules and cell structures involved in membrane transport, protein production and storage/transfer of genetic information.  | 3. Communicate the primary principles and processes underlying at least one natural system (for example: atoms and molecules, cells and organisms, the oceans and atmosphere, the solid earth, or the cosmos) | COK, COM, CRT |
| 6. Match the four major tissue types to their general function and to examples within the human body.  | 3. Communicate the primary principles and processes underlying at least one natural system (for example: atoms and molecules, cells and organisms, the oceans and atmosphere, the solid earth, or the cosmos) | COK, COM, CRT |
| 7. Identify major bones and muscles.  | 3. Communicate the primary principles and processes underlying at least one natural system (for example: atoms and molecules, cells and organisms, the oceans and atmosphere, the solid earth, or the cosmos) | COK, COM, CRT |
| 8. Relate how bones and muscles interact to cause body movement.  | 3. Communicate the primary principles and processes underlying at least one natural system (for example: atoms and molecules, cells and organisms, the oceans and atmosphere, the solid earth, or the cosmos) | COK, COM, CRT |
| 9. Identify the key aspects of muscle contraction.  | 3. Communicate the primary principles and processes underlying at least one natural system (for example: atoms and molecules, cells and organisms, the oceans and atmosphere, the solid earth, or the cosmos) | COK, COM, CRT |
| 10. Anatomically locate the major structures of the nervous, endocrine, cardiovascular, respiratory, digestive and urinary systems.  | 3. Communicate the primary principles and processes underlying at least one natural system (for example: atoms and molecules, cells and organisms, the oceans and atmosphere, the solid earth, or the cosmos) | COK, COM, CRT |
| 11. Explain how nerve cells transmit signals in the human body.  | 3. Communicate the primary principles and processes underlying at least one natural system (for example: atoms and molecules, cells and organisms, the oceans and atmosphere, the solid earth, or the cosmos) | COK, COM, CRT |
| 12. Match major structures of the nervous system to their function.  | 3. Communicate the primary principles and processes underlying at least one natural system (for example: atoms and molecules, cells and organisms, the oceans and atmosphere, the solid earth, or the cosmos) | COK, COM, CRT |
| 13. Describe negative feedback control of hormone release and give examples from the human body.  | 3. Communicate the primary principles and processes underlying at least one natural system (for example: atoms and molecules, cells and organisms, the oceans and atmosphere, the solid earth, or the cosmos) | COK, COM, CRT |
| 14. Identify hormones secreted by the major endocrine glands and their functions.  | 3. Communicate the primary principles and processes underlying at least one natural system (for example: atoms and molecules, cells and organisms, the oceans and atmosphere, the solid earth, or the cosmos) | COK, COM, CRT |
| 15. Summarize the composition and how the different components facilitate the roles of blood in the body.  | 3. Communicate the primary principles and processes underlying at least one natural system (for example: atoms and molecules, cells and organisms, the oceans and atmosphere, the solid earth, or the cosmos) | COK, COM, CRT |
| 16. Describe the pathway of blood flow through the heart, lungs and body.  | 3. Communicate the primary principles and processes underlying at least one natural system (for example: atoms and molecules, cells and organisms, the oceans and atmosphere, the solid earth, or the cosmos) | COK, COM, CRT |
| 17. Outline the electrical and physical events in the cardiac cycle.  | 3. Communicate the primary principles and processes underlying at least one natural system (for example: atoms and molecules, cells and organisms, the oceans and atmosphere, the solid earth, or the cosmos) | COK, COM, CRT |
| 18. Define blood pressure and recognize factors that affect it.  | 3. Communicate the primary principles and processes underlying at least one natural system (for example: atoms and molecules, cells and organisms, the oceans and atmosphere, the solid earth, or the cosmos) | COK, COM, CRT |
| 19. Describe the respiratory processes of ventilation and respiration.  | 3. Communicate the primary principles and processes underlying at least one natural system (for example: atoms and molecules, cells and organisms, the oceans and atmosphere, the solid earth, or the cosmos) | COK, COM, CRT |
| 20. Explain how the digestive system breaks down food and absorbs nutrients.  | 3. Communicate the primary principles and processes underlying at least one natural system (for example: atoms and molecules, cells and organisms, the oceans and atmosphere, the solid earth, or the cosmos) | COK, COM, CRT |
| 21. Identify necessary components of a balanced diet.  | 1. Evaluate information scientifically in the context of his/her own life3. Communicate the primary principles and processes underlying at least one natural system (for example: atoms and molecules, cells and organisms, the oceans and atmosphere, the solid earth, or the cosmos) | COK, COM, CRT, IIT, RESCOK, COM, CRT |
| 22. Critically evaluate health information presented in the news and other media sources.  | 1. Evaluate information scientifically in the context of his/her own life2. Explain the importance of observation and hypothesis testing in the scientific process, and distinguish between the scientific process and other human endeavors  | COK, COM, CRT, IIT, RESCOK, COM, CRT |
| 23. Practice scientific methods to evaluate human health.  | 2. Explain the importance of observation and hypothesis testing in the scientific process, and distinguish between the scientific process and other human endeavors4. Perform and effectively communicate the results of scientific investigations, and explain how research is done in science5. Demonstrate the safe and proper use of scientific instrumentation, measuring devices, chemical reagents, media, and/or other tools of science in a laboratory or field setting relevant to specific disciplines of science | COK, COM, CRTCOK, COM, CRT, IIT, LWCCOK, COM, CRT, IIT, LWC |
| **TACOMA COMMUNITY COLLEGEOutcome Map** **Course:** CMST& 210 |
| **Course Outcomes**  | **PLO**  | **DLO**  |
| 1. Differentiate interpersonal communication from other communication forms.  | 3. Read critically and research effectively to support thesis5. Demonstrate ethical standards in all phases of the writing and/or communication process to include using collaboration within academically appropriate guidelines | LWC, RESCOK, CRT, IIT |
| 2. Describe the process of communicating.  | 3. Read critically and research effectively to support thesis5. Demonstrate ethical standards in all phases of the writing and/or communication process to include using collaboration within academically appropriate guidelines | COK, CRT, IITLWC, RES |
| 3. Explain how the process of communication can be affected.  | 3. Read critically and research effectively to support thesis 4. Use appropriate writing and/or communication strategies, standard grammar, and academic documentation conventions5. Demonstrate ethical standards in all phases of the writing and/or communication process to include using collaboration within academically appropriate guidelines | COK, CRT, IITCOK, COMLWC, RES |
| 4. Deconstruct the elements of self-concept and attribute their effect on interpersonal communication.  | 3. Read critically and research effectively to support thesis5. Demonstrate ethical standards in all phases of the writing and/or communication process to include using collaboration within academically appropriate guidelines | COK, CRT, IITLWC, RES |
| 5. Explain how the perceptual process is affected.  | 3. Read critically and research effectively to support thesis 4. Use appropriate writing and/or communication strategies, standard grammar, and academic documentation conventions5. Demonstrate ethical standards in all phases of the writing and/or communication process to include using collaboration within academically appropriate guidelines | COK, CRT, IITCOK, COMLWC, RES |
| 6. Appraise how the perceptual process affects emotional states.  | 3. Read critically and research effectively to support thesis 4. Use appropriate writing and/or communication strategies, standard grammar, and academic documentation conventions5. Demonstrate ethical standards in all phases of the writing and/or communication process to include using collaboration within academically appropriate guidelines | COK, CRT, IITCOK, COMLWC, RES |
| 7. Explain the effects of one's emotional state on interpersonal communication.  | 3. Read critically and research effectively to support thesis 4. Use appropriate writing and/or communication strategies, standard grammar, and academic documentation conventions5. Demonstrate ethical standards in all phases of the writing and/or communication process to include using collaboration within academically appropriate guidelines | COK, CRT, IITCOK, COMLWC, RES |
| 8. Explain the effects of language on interpersonal communication.  | 3. Read critically and research effectively to support thesis 4. Use appropriate writing and/or communication strategies, standard grammar, and academic documentation conventions5. Demonstrate ethical standards in all phases of the writing and/or communication process to include using collaboration within academically appropriate guidelines | COK, CRT, IITCOK, COMLWC, RES |
| 9. Explain the effects of nonverbal cues on interpersonal communication.  | 3. Read critically and research effectively to support thesis 4. Use appropriate writing and/or communication strategies, standard grammar, and academic documentation conventions5. Demonstrate ethical standards in all phases of the writing and/or communication process to include using collaboration within academically appropriate guidelines | COK, COMLWC, RESCOK, CRT, IIT |
| 10. Describe the stages of listening.  | 3. Read critically and research effectively to support thesis 4. Use appropriate writing and/or communication strategies, standard grammar, and academic documentation conventions5. Demonstrate ethical standards in all phases of the writing and/or communication process to include using collaboration within academically appropriate guidelines | COK, CRT, IITCOK, COMLWC, RES |
| 11. Appraise the importance of active listening in the communication process.  | 3. Read critically and research effectively to support thesis 4. Use appropriate writing and/or communication strategies, standard grammar, and academic documentation conventions5. Demonstrate ethical standards in all phases of the writing and/or communication process to include using collaboration within academically appropriate guidelines | COK, CRT, IITCOK, COMLWC, RES |
| 12. Identify effective strategies to manage conflict.  | 3. Read critically and research effectively to support thesis 4. Use appropriate writing and/or communication strategies, standard grammar, and academic documentation conventions5. Demonstrate ethical standards in all phases of the writing and/or communication process to include using collaboration within academically appropriate guidelines | COK, CRT, IITCOK, COMLWC, RES |
| 13. Explain the role of interpersonal communication in relationship forming and maintenance.  | 3. Read critically and research effectively to support thesis5. Demonstrate ethical standards in all phases of the writing and/or communication process to include using collaboration within academically appropriate guidelines | COK, CRT, IITLWC, RES |
| **TACOMA COMMUNITY COLLEGEOutcome Map** **Course:** ENGL& 101 |
| **Course Outcomes**  | **PLO**  | **DLO**  |
| 1. Craft, develop, and support a clear thesis; organize essays logically.  | 1. Craft, develop, and support a specific, debatable thesis  | COK, COM, CRT |
| 2. Use writing strategies appropriate to audience, purpose and occasion.  | 2. Draft and refine a well-organized essay, speech, or other forms of communication appropriate to context and audience 4. Use appropriate writing and/or communication strategies, standard grammar, and academic documentation conventions | COK, COM, CRTCOK, COM |
| 3. Use expository essays to express original ideas.  | 1. Craft, develop, and support a specific, debatable thesis2. Draft and refine a well-organized essay, speech, or other forms of communication appropriate to context and audience  | COK, COM, CRTCOK, COM, CRT |
| 4. Read critically.  | 3. Read critically and research effectively to support thesis | COK, CRT, IIT |
| 5. Conduct research as needed, use authoritative resources, and follow documentation rules.  | 4. Use appropriate writing and/or communication strategies, standard grammar, and academic documentation conventions5. Demonstrate ethical standards in all phases of the writing and/or communication process to include using collaboration within academically appropriate guidelines | COK, COMLWC, RES |
| 6. Use standard grammar and academic writing conventions.  | 4. Use appropriate writing and/or communication strategies, standard grammar, and academic documentation conventions | COK, COM |
| 7. Use a writing process of pre-writing, drafting and revision.  | 1. Craft, develop, and support a specific, debatable thesis2. Draft and refine a well-organized essay, speech, or other forms of communication appropriate to context and audience  | COK, COM, CRTCOK, COM, CRT |
| 8. Use academically accepted collaboration to improve writing and understanding.  | 4. Use appropriate writing and/or communication strategies, standard grammar, and academic documentation conventions5. Demonstrate ethical standards in all phases of the writing and/or communication process to include using collaboration within academically appropriate guidelines | COK, COMLWC, RES |
| 9. Take responsibility for own learning and ethical behavior in academic course-work.  | 5. Demonstrate ethical standards in all phases of the writing and/or communication process to include using collaboration within academically appropriate guidelines | LWC, RES |
| **TACOMA COMMUNITY COLLEGEOutcome Map** **Course:** MATH& 142 |
| **Course Outcomes**  | **PLO**  | **DLO**  |
| 1. Demonstrate an understanding of the unit circle definition of sine, cosine, and tangent.  | 2. Determine, create, and use appropriate and reasonable mathematical constructs to model, understand, and explain phenomena encountered in the world 4. Communicate mathematical information formally, using appropriate math notation and terminology, and informally by using everyday language to express ideas | COK, COM, CRTCOK, COM |
| 2. Create and analyze the graphs of trigonometric functions.  | 1. Interpret, analyze, and create graphs and charts that communicate quantitative or relational information2. Determine, create, and use appropriate and reasonable mathematical constructs to model, understand, and explain phenomena encountered in the world  | COK, COM, CRTCOK, COM, CRT |
| 3. Use the unit circle, point in the plane, and right triangle descriptions to evaluate trigonometric functions and solve problems.  | 2. Determine, create, and use appropriate and reasonable mathematical constructs to model, understand, and explain phenomena encountered in the world 4. Communicate mathematical information formally, using appropriate math notation and terminology, and informally by using everyday language to express ideas | COK, COM, CRTCOK, COM |
| 4. Use trigonometric functions to model numeric relationships expressed graphically, verbally, or in tables of values.  | 2. Determine, create, and use appropriate and reasonable mathematical constructs to model, understand, and explain phenomena encountered in the world3. Determine and carry out an appropriate algorithm to solve problems that are amenable to mathematical solutions 4. Communicate mathematical information formally, using appropriate math notation and terminology, and informally by using everyday language to express ideas | COK, COM, CRTCOK, CRTCOK, COM |
| 5. Use trigonometric identities to simplify an expression or solve an equation.  | 3. Determine and carry out an appropriate algorithm to solve problems that are amenable to mathematical solutions4. Communicate mathematical information formally, using appropriate math notation and terminology, and informally by using everyday language to express ideas | COK, CRTCOK, COM |
| 6. Demonstrate an understanding of the inverse trigonometric functions.  | 2. Determine, create, and use appropriate and reasonable mathematical constructs to model, understand, and explain phenomena encountered in the world 4. Communicate mathematical information formally, using appropriate math notation and terminology, and informally by using everyday language to express ideas | COK, COM, CRTCOK, COM |
| 7. Solve trigonometric equations both graphically and analytically.  | 3. Determine and carry out an appropriate algorithm to solve problems that are amenable to mathematical solutions 4. Communicate mathematical information formally, using appropriate math notation and terminology, and informally by using everyday language to express ideas5. Use technology to analyze and solve mathematical problems and to effectively communicate solutions to problems, particularly those that cannot be solved efficiently by other means | COK, CRTCOK, COMCOK, COM, CRT, IIT |
| 8. Determine the standard equations of ellipses, hyperbolas, and parabolas and use the equations to graph conic sections.  | 1. Interpret, analyze, and create graphs and charts that communicate quantitative or relational information3. Determine and carry out an appropriate algorithm to solve problems that are amenable to mathematical solutions 4. Communicate mathematical information formally, using appropriate math notation and terminology, and informally by using everyday language to express ideas | COK, COM, CRTCOK, CRTCOK, COM |
| 9. Use the geometric properties of the conic sections in applications.  | 2. Determine, create, and use appropriate and reasonable mathematical constructs to model, understand, and explain phenomena encountered in the world3. Determine and carry out an appropriate algorithm to solve problems that are amenable to mathematical solutions 4. Communicate mathematical information formally, using appropriate math notation and terminology, and informally by using everyday language to express ideas | COK, COM, CRTCOK, CRTCOK, COM |
| 10. Apply parametric equations and graph the associated plane curve.  | 1. Interpret, analyze, and create graphs and charts that communicate quantitative or relational information  | COK, COM, CRT |
| 11. Write clear and complete solutions to mathematical problems, including correct notation and written explanations when appropriate.  | 4. Communicate mathematical information formally, using appropriate math notation and terminology, and informally by using everyday language to express ideas | COK, COM |
| 12. Use a graphing calculator and/or computer software as appropriate.  | 5. Use technology to analyze and solve mathematical problems and to effectively communicate solutions to problems, particularly those that cannot be solved efficiently by other means | COK, COM, CRT, IIT |
| **TACOMA COMMUNITY COLLEGEOutcome Map** **Course:** SPAN& 221 |
| **Course Outcomes**  | **PLO**  | **DLO**  |
| 1. Recognize oral communication when presented in simple sentences.  | 1. Know and recall important ideas and facts relating to Humanities Program subject areas (Art, Creative Writing, World Languages, Humanities, Literature, Music, and Philosophy)2. Apply critical thinking skills to explore and interpret the human diversity of the experience3. Utilizing various media, create and communicate content understanding4. Demonstrate empathy and understanding based on recognition of historical and cultural contexts in more than one Humanities subject area  | COKCRT, IITCOMLWC, RES |
| 2. Interpret a variety of topics including personal information and social situations.  | 1. Know and recall important ideas and facts relating to Humanities Program subject areas (Art, Creative Writing, World Languages, Humanities, Literature, Music, and Philosophy)2. Apply critical thinking skills to explore and interpret the human diversity of the experience3. Utilizing various media, create and communicate content understanding4. Demonstrate empathy and understanding based on recognition of historical and cultural contexts in more than one Humanities subject area  | COKCRT, IITCOMLWC, RES |
| 3. Explain about themselves and about social events in short, simple compositions.  | 1. Know and recall important ideas and facts relating to Humanities Program subject areas (Art, Creative Writing, World Languages, Humanities, Literature, Music, and Philosophy)2. Apply critical thinking skills to explore and interpret the human diversity of the experience3. Utilizing various media, create and communicate content understanding4. Demonstrate empathy and understanding based on recognition of historical and cultural contexts in more than one Humanities subject area  | COKCRT, IITCOMLWC, RES |
| 4. Report an understanding of simple short texts of familiar topics.  | 1. Know and recall important ideas and facts relating to Humanities Program subject areas (Art, Creative Writing, World Languages, Humanities, Literature, Music, and Philosophy)2. Apply critical thinking skills to explore and interpret the human diversity of the experience3. Utilizing various media, create and communicate content understanding4. Demonstrate empathy and understanding based on recognition of historical and cultural contexts in more than one Humanities subject area  | COKCRT, IITCOMLWC, RES |
| 5. Relate Spanish speaking cultures and the nature of the Spanish language to the student's culture.  | 1. Know and recall important ideas and facts relating to Humanities Program subject areas (Art, Creative Writing, World Languages, Humanities, Literature, Music, and Philosophy)2. Apply critical thinking skills to explore and interpret the human diversity of the experience3. Utilizing various media, create and communicate content understanding4. Demonstrate empathy and understanding based on recognition of historical and cultural contexts in more than one Humanities subject area  | COKCRT, IITCOMLWC, RES |
| 6. Recognize distinctive viewpoints through the Spanish language and the culture of Spanish speaking countries.  | 1. Know and recall important ideas and facts relating to Humanities Program subject areas (Art, Creative Writing, World Languages, Humanities, Literature, Music, and Philosophy)2. Apply critical thinking skills to explore and interpret the human diversity of the experience3. Utilizing various media, create and communicate content understanding4. Demonstrate empathy and understanding based on recognition of historical and cultural contexts in more than one Humanities subject area  | COKCRT, IITCOMLWC, RES |