

COM GE SLO Mapping 2016: Area E

Communication and Analytical Thinking GE AREA E SLOs:	Evaluate information critically and express concepts and reasoning clearly.	Build clear and logical arguments to support or refute hypotheses.	Develop and apply analytical and reasoning skills to define, plan and solve complex problems.
CIS 215	<ul style="list-style-type: none"> ~ Plan and create code employing sequential structure ~ Plan and create code employing selection structure ~ Plan and create code employing repetition structure ~ Write code to create Sub procedures and Functions ~ Write code to create Classes and objects ~ Writing code to connect and manipulate a MS Access database 	~ Analyze and diagram a solution for a problem using pseudo code and flowcharts	<ul style="list-style-type: none"> ~ Use problem-solving skills for planning and developing applications using the Visual BASIC .NET programming language ~ Analyze and diagram a solution for a problem using pseudo code and flowcharts
COMP 130			<ol style="list-style-type: none"> 1. Analyze requirements for a piece of software to be created. 2. Design algorithms, to include flowcharting. 3. Translating the steps in a flowchart into C++ instructions. 4. Testing and debugging the software created.
COMP 135	2. Create computer software using Java		<ol style="list-style-type: none"> 1. Design effective algorithms 2. Create computer software using Java
COMP 160	3. Write and debug simple programs written in Assembly language	3. Write and debug simple programs written in Assembly language	<ol style="list-style-type: none"> 1. Describe the functionality of the core computer hardware components: the CPU, memory and I/O devices. 2. Understand how data is represented and manipulated in a computer. 3. Write and debug simple programs written in Assembly language
COMP 220	1. Compare and contrast the pros and cons of some well-known data structures. 2. Select the best data structure to solve a particular real life problem.	2. Select the best data structure to solve a particular real life problem.	<ol style="list-style-type: none"> 3. Compare and contrast the pros and cons of well-known sorting algorithms. 4. Analyze the time/space complexities of algorithms
COMP 232		1. Create and test Java classes and methods to implement algorithms	<ol style="list-style-type: none"> 1. Create and test Java classes and methods to implement algorithms. 2. Understand and apply the concepts of object-oriented programming in Java. 3. Implement functionality provided by the Java Application Programming Interface (API) libraries in Java programs.
COMP 235	2. Incorporate predefined library code, such as STL. 3. Use advanced language constructs such as 'pointers' and linked structures. 4. Create applications of no less than 500 lines of code.		<ol style="list-style-type: none"> 1. Create software using object-oriented design. 2. Incorporate predefined library code, such as STL. 3. Use advanced language constructs such as 'pointers' and linked structures. 4. Create applications of no less than 500 lines of code.
ENGL 130			
ENGL 151	<p>Write organized, well-supported, and analytical essays (1,500-2,000 words), using a variety of critical techniques to analyze texts</p> <p>Use information technology to effectively evaluate, incorporate, and properly cite research</p> <p>Write clear and fluent sentences that effectively follow the rules of grammar, punctuation, and usage</p>	Use information technology to effectively evaluate, incorporate, and properly cite research	Identify and analyze how literary elements, criticism, historical contexts, and logical fallacies relate to texts

COM GE SLO Mapping 2016: Area E

	Write organized, well-supported, and analytical essays (1,500-2,000 words), using a variety of critical techniques to analyze texts		
	Use information technology to effectively evaluate, incorporate, and properly cite research		
ENGL 155	Write clear and fluent sentences that effectively follow the rules of grammar, punctuation, and usage	Use information technology to effectively evaluate, incorporate, and properly cite research	Identify and analyze how literary elements, criticism, historical contexts, and logical fallacies relate to texts
MATH 095X			1) Evaluate mathematical expressions using the order of operations. 2) Solve equations in one variable. 3) Solve applications involving signed numbers.
MATH 103			1. Find the domain of a rational function. 2. Find the maximum value of a function of two variable subject to constraints. 3. Solve a system of three linear equations in three variables. 4. Solve a rational equation. 5. Solve a logarithmic equation. 6. Find the equation of the circle whose radius and center are given.
MATH 103A			1. Find the domain of a rational function. 2. Find the maximum value of a function of two variable subject to constraints. 3. Solve a system of three linear equations in three variables.
MATH 103B			1. Solve a rational equation. 2. Solve a logarithmic equation. 3. Find the equation of the circle whose radius and center are given.
MATH 103X			
MATH 103Y			
MATH 104			1. Identify special triangles and their related angle and side measures. 2. Determine the horizontal asymptotes of a rational function. 3. Determine the period and phase shift of either a sine or cosine function such as $y = A\sin(\omega t + \phi)$ and correctly draw the graph of that function.
MATH 104Y			
MATH 105			1. Algebraically determine the real and/or complex roots of a polynomial of fifth or less than can be factored using the standard methods of college algebra. 2. Determine the horizontal asymptotes of a rational function. 3. Solve an exponential equation of the level of difficulty equal to that of solving for the domain variable of one of the hyperbolic functions.
MATH 109			1. Algebraically determine the real and/or complex roots of a polynomial of fifth or less than can be factored using the standard methods of college algebra. 2. Determine the horizontal asymptotes of a rational function. 3. Determine the period and phase shift of either a sine or cosine function such as $y = A\sin(\omega t + \phi)$ and correctly draw the graph of that function.

COM GE SLO Mapping 2016: Area E

MATH 115		4. Construct and interpret confidence intervals, and test hypothesis involving samples from one and two populations.	<ol style="list-style-type: none"> 1. Calculate measures of central tendency and variation for a given data set. 2. Calculate the mean and variance of a discrete distribution. 3. Calculate probabilities using normal and t-distributions. 4. Construct and interpret confidence intervals, and test hypothesis involving samples from one and two populations.
MATH 116			<ol style="list-style-type: none"> 1. so, solve it. 2. Perform algebraic operations on vectors and matrices. 3. Determine when a function is or is not a linear transformation. 4. Given a linear transformation, <ol style="list-style-type: none"> (a) Determine the range, kernel, rank and nullity. (b) Determine if it is invertible, and if so then find its inverse. 5. Construct elementary matrices corresponding to elementary row operations and use both to construct the inverse of an invertible square matrix. 6. Determine if a set of vectors is linearly independent. 7. Construct a basis for a given vector space, and determine its dimension. 8. Determine if a subset of a given vector space is a subspace. 9. Determine if a given set and field with addition and scalar multiplication is a vector space. 9. Compute the transition matrix between two bases. 10. Calculate the determinant of a square matrix and use it to determine the linear independence of row or column vectors, and determine invertibility. 11. Calculate a determinant by expansion in cofactors
MATH 121		1) Apply power, sum and difference, product, and power rule to differentiate various classes of functions including polynomial, rational, exponential, logarithmic.	<ol style="list-style-type: none"> 1) Apply power, sum and difference, product, and power rule to differentiate various classes of functions including polynomial, rational, exponential, logarithmic. 2) Integrate functions using multiple methods including substitution and other techniques. 3) Sketch the graphs of functions using asymptotes, intercepts, first and second derivative tests, extrema, concavity and points of inflection.
MATH 122			<ol style="list-style-type: none"> 1. Construct and solve optimization models involving functions of several variables. 2. Determine indefinite and definite integrals by applying basic integration techniques such as: substitution method, integration by parts, numerical integration. 3. Solve differential equations, including initial value problems, by anti-differentiation, separation of variables, Euler's Method, and constructing solution sketches.
MATH 123			<ol style="list-style-type: none"> 1. Compute the limit of a function at a real number using Limit Laws, Sandwich theorem, and L'Hospital's Rule. 2. Sketch curves using extrema and critical points, first and second derivative tests, and concavity and asymptotes. 3. Calculate areas of plane regions, volumes; arc length and area of a surface of revolution; center of mass; work; fluid force on submerged lamina and other applications.

COM GE SLO Mapping 2016: Area E

MATH 124			<p>1. Evaluate indefinite integrals that require</p> <p>(a) The method of partial fraction decomposition.</p> <p>(b) The method of trigonometric substitution.</p> <p>(c) The method of integration by parts.</p> <p>2. Use definite integrals (including improper integration) to solve applications involving areas, volumes, work, curvature and length of a curve, in rectangular, parametric, and polar form.</p> <p>3. Evaluate the limit of an indeterminate form.</p> <p>4. Represent the function as a power series and determine the interval of convergence of the power series.</p>
PHIL 112	<p>1. Demonstrate the ability to identify the parts of arguments.</p> <p>2. Demonstrate the ability to identify the differences between inductive and deductive forms of reasoning.</p> <p>3. Demonstrate an understanding of validity, invalidity, soundness and unsoundness in argumentation.</p> <p>4. Demonstrate skill in the use of argument diagrams, categorical logic and symbolic logic.</p> <p>5. Demonstrate the ability to identify and critique formal and informal fallacies</p> <p>6. Utilize the tools of logic to think critically about important issues.</p> <p>7. Think critically about logic itself.</p>		<p>4. Demonstrate skill in the use of argument diagrams, categorical logic and symbolic logic.</p> <p>6. Utilize the tools of logic to think critically about important issues.</p>
PSY 205	<p>3. Summarize and critically evaluate various forms of evidence (data, study design, research findings, and conclusions) provided in Behavioral Science research studies.</p>	<p>3. Summarize and critically evaluate various forms of evidence (data, study design, research findings, and conclusions) provided in Behavioral Science research studies.</p> <p>4. Formulate comparative strategies for testing and analyzing theories and data.</p> <p>5. Design, develop, pilot, and assess a formal research proposal.</p>	<p>3. Summarize and critically evaluate various forms of evidence (data, study design, research findings, and conclusions) provided in Behavioral Science research studies.</p> <p>4. Formulate comparative strategies for testing and analyzing theories and data.</p> <p>5. Design, develop, pilot, and assess a formal research proposal.</p>
SOC 205	<p>3. Summarize and critically evaluate various forms of evidence (data, study design, research findings, and conclusions) provided in Behavioral Science research studies.</p>		<p>3. Summarize and critically evaluate various forms of evidence (data, study design, research findings, and conclusions) provided in Behavioral Science research studies.</p> <p>4. Formulate comparative strategies for testing and analyzing theories and data.</p> <p>5. Design, develop, pilot, and assess a formal research proposal.</p>
SPCH 110	<p>4. Research and organize evidence in support of a thesis from a variety of library and on-line sources.</p>	<p>4. Research and organize evidence in support of a thesis from a variety of library and on-line sources.</p>	<p>2. Apply communication theory to public speaking by critically listening to speakers and providing useful written and verbal feedback.</p> <p>4. Research and organize evidence in support of a thesis from a variety of library and on-line sources.</p>
SPCH 120	<p>2. Analyze interpersonal communication environments in terms of emotional, cultural, social, physical, and relational principles</p>		
SPCH 122	<p>2. Research, develop, and evaluate a variety of supporting materials from print and online sources.</p>	<p>2. Research, develop, and evaluate a variety of supporting materials from print and online sources.</p>	
SPCH 128			
SPCH 130	<p>7. Practice communication effectiveness within the small group framework.</p>		<p>5. Demonstrate knowledgeable use of group communication practices that assist in problem solving and analytical processes.</p>
SPCH 132	<p>1. Write and articulate lines of reasoning in support of or opposition to a critical issue.</p> <p>4. Detect weak and fallacious arguments.</p>	<p>4. Detect weak and fallacious arguments.</p> <p>3. Formulate, express, and defend a claim.</p> <p>5. Listen to, evaluate, and respond appropriately to the claims of others.</p>	<p>2. Recognize, define, and apply the principles of argumentation and persuasion.</p> <p>3. Formulate, express, and defend a claim.</p>

COM GE SLO Mapping 2016: Area E

STAT 115			<p>measurement and their implications.</p> <ol style="list-style-type: none"> 2. Identify the standard methods of obtaining data and identify advantages and disadvantages of each. 3. Solve problems involving the basics of probability theory. 4. Calculate various types of measures of central tendency and measures of dispersion. 5. Calculate the mean and variance of a discrete distribution. 6. Interpret and construct graphical representations of data. 7. Apply uniform, binomial, and Poisson distributions. 8. Distinguish the difference between sample and population distributions and analyze the role played by the Central Limit Theorem. 9. Solve problems that use a continuous random variable and the normal distribution and the t-distribution. 10. Construct and interpret confidence intervals, and be able to determine sample sizes for fixed interval estimates. 11. Identify the basic concept of hypothesis testing including Type I and II errors. 12. Formulate hypothesis tests involving samples from one and two populations. 13. Select the appropriate technique for testing a
----------	--	--	---