SANTA MONICA COLLEGE
ACADEMIC
SENATE
1900 Pico Boulevard
Santa Monica, CA 90405
310.434.4611

CURRICULUM COMMITTEE ❙ AGENDA

Wednesday, May 3, 2017 ❙ 3:00 p.m.
Loft Conference Room – Drescher Hall 300-E

Members:

Guido Davis Del Piccolo, *Chair*	Maral Hyeler	Emin Menachekanian	Redelia Shaw
Jennifer Merlic, *Vice Chair*	Sasha King	Estela Narrie	David Shirinyan
Eve Adler	William Konya	James Pacchioli	Mark Tomasic
Brenda Antrim (non-voting)	Jing Liu	Adrian Restrepo (AS)	Odemaris Valdivia
Christina Gabler	Emily Lodmer	Elaine Roque	Audra Wells
Saori Gurung (AS)	Georgia Lorenz	Gita Runkle	Joshua Withers

Interested Parties:

Maria Bonin	Vicki Drake	Stacy Neal	Linda Sinclair
Patricia Burson	Kiersten Elliott	Patricia Ramos	Esau Tovar
Dione Carter	Pete Morris	Estela Ruezga	Julie Yarrish

Ex-Officio Members:

Fran Chandler	Terrance Ware Jr. (AS)

A G E N D A

(Items for information are listed numerically; major items of business are listed alphabetically)

I. Call to order
II. Public Comments *(Five minutes is allotted to any member of the public who wishes to address the Committee.)*
III. Approval of Minutes 3
IV. Chair's report:

V. Information Items:

(Course Updates)
1. MATH 20 Intermediate Algebra

VI. Major Items of Business:

(Course Revisions)
a. MATH 7 Calculus I (addition of prerequisite pair of MATH 3 and MATH 4 as an alternative to MATH 2) 6

(New Courses)
b. GEOG 25 Introduction to Cartography 18
c. GIS 26 Introduction to Remote Sensing 21
d. GIS 27 Applications in GIS (Advisory: GIS / GEOG 20) 24
e. MATH 4 College Algebra for STEM Majors (prerequisite: MATH 20; Skills Advisory: Eligibility for English 1) 30
f. PSYCH 8s Community Psychology (Advisories: PSYCH 1 and Eligibility for English 1) 39

(Course Reinstatements)
g. MATH 3 Trigonometry with Applications (prerequisites: MATH 20 and 32; Advisories: MATH 4 and Eligibility for English 1) 49

(Distance Education)
h. ASTRON 6 Archaeoastronomy 64

i. GIS / GEOG 23 Intermediate Geographic Information Systems 72

(Global Citizenship)

j. PSYCH 8s Community Psychology 39
k. Addition of Genders & Sexualities as a new category of Global Citizenship.....79

(New Programs)

l. Basic Computer Operations Certificate of Completion (Noncredit) 82
m. Electronic Medical Records Clerk Department Certificate 83
n. Hospital Inpatient Coder Department Certificate 84
o. Sociology Associate in Arts for Transfer (AA-T) 85

VII. Consent Agenda: (Any item pulled from the Consent Agenda will be discussed and voted on separately.)

p. ENGL 28 Intensive College Writing Skills (course renumbering from ENGL 25)

VIII. New Business:

- CTE Approval Process.....87

IX. Old Business:

- Guided Pathways: Organizational Structure and Recommendations

X. Adjournment

Please advise Guido Davis Del Piccolo (x. 3561), Jennifer Merlic (x. 4616) or Irena Zugic (x. 4403) if you are unable to attend this meeting.

SANTA MONICA COLLEGE
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SENATE
1900 Pico Boulevard
Santa Monica, CA 90405
310.434.4611

CURRICULUM COMMITTEE ❙ MINUTES

Wednesday, April 19, 2017 ❙ 3:00 p.m.
Loft Conference Room – Drescher Hall 300-E

Members Present:

Guido Davis Del Piccolo, *Chair*	Sasha King	Estela Narrie	David Shirinyan
Jennifer Merlic, *Vice Chair*	William Konya	James Pacchioli	Mark Tomasic
Eve Adler	Jing Liu	Elaine Roque	Odemaris Valdivia
Brenda Antrim (non-voting)	Emily Lodmer	Gita Runkle	Joshua Withers
Maral Hyeler	Georgia Lorenz	Redelia Shaw	

Members Absent:

Christina Gabler	Saori Gurung (AS)	Emin Menachekanian	Adrian Restrepo (AS)
Audra Wells			

Others Present:

Jason Beardsley	Gary Huff	Laura Manson

MINUTES

(Items for information are listed numerically; major items of business are listed alphabetically)

I. Call to order:
The meeting was called to order at 3:08pm by Jennifer as Guido arrived late due to a hiring committee obligation.

II. Public Comments:
None.

III. Approval of Minutes:
The minutes of April 5, 2017 were unanimously approved. The following members abstained: Eve Adler, Mark Tomasic, and Joshua Withers. Maral Hyeler, Emily Lodmer, and Odemaris Valdivia were not present for vote.

IV. Chair's report:
- Jennifer reported that all approved action items from the previous meeting together with this meeting will be approved by the Academic Senate on Tuesday, April 25, 2017.

V. Information Items:

(Course Updates)
1. ECE 21 Observation and Assessment

VI. Major Items of Business:

(Course Revisions)
a. ECE 11 Child, Family and Community (addition of skills advisory: PSYCH 11) – presented by Gary Huff and Laura Manson
   Motion made by: Mark Tomasic **Seconded by:** Elaine Roque
   The motion passed unanimously.
b. ECE 17 Introduction to Curriculum (addition of skills advisory: PSYCH 11) – presented by Gary Huff and Laura Manson
   Motion made by: Mark Tomasic **Seconded by:** Elaine Roque
   The motion passed unanimously.

c. ECE 45 Introduction to Children With Special Needs (addition of skills advisory: PSYCH 11) – presented by Gary Huff and Laura Manson
Motion made by: Mark Tomasic **Seconded by:** Elaine Roque
The motion passed unanimously.

d. ECE 48 Adult Supervision and Mentoring in Early Education (removal of ECE 2 from prerequisites and change of ECE 21 from skills advisory to prerequisite) – presented by Gary Huff and Laura Manson
Motion made by: Mark Tomasic **Seconded by:** Elaine Roque
The motion passed unanimously.

e. ECE 49 Curriculum and Strategies for Children with Special Needs (addition of ECE 45 as a prerequisite) – presented by Gary Huff and Laura Manson
Motion made by: Mark Tomasic **Seconded by:** Elaine Roque
The motion passed unanimously.

f. ECE 71 Infants and Toddler Education and Care (addition of ECE 46 as a skills advisory) – presented by Gary Huff and Laura Manson
Motion made by: Mark Tomasic **Seconded by:** Elaine Roque
The motion passed unanimously.

(New Courses)

g. ECE 24 Preschool and Early Primary Development – presented by Gary Huff and Laura Manson
(Approved with minor changes)
Motion made by: Odemaris Valdivia **Seconded by:** Eve Adler
The motion passed unanimously.

h. ECE 25 Assessment in Transitional Kindergarten and Kindergarten (prerequisite: ECE 2 and ECE 24) – presented by Gary Huff and Laura Manson
(Approved with minor changes)
Motion made by: Odemaris Valdivia **Seconded by:** Eve Adler
The motion passed unanimously.
Prerequisite: ECE 2 and ECE 24
Motion made by: David Shirinyan **Seconded by:** Maral Hyeler
The motion passed unanimously.

i. ECE 26 CA Preschool Foundations and Frameworks 1– presented by Gary Huff and Laura Manson
(Approved with minor changes)
Motion made by: Odemaris Valdivia **Seconded by:** Eve Adler
The motion passed unanimously.

j. ECE 27 CA Preschool Foundations and Frameworks 2 – presented by Gary Huff and Laura Manson
(Approved with minor changes)
Motion made by: Odemaris Valdivia **Seconded by:** Eve Adler
The motion passed unanimously.

k. ECE 28 Practicum in Transitional Kindergarten Teaching (prerequisite: ECE 25 and (ECE 26 or ECE 27)) – presented by Gary Huff and Laura Manson
(Approved with change to the course title and other minor changes)
Motion made by: Odemaris Valdivia **Seconded by:** Eve Adler
The motion passed unanimously.
Prerequisite: ECE 25 and (ECE 26 or ECE 27)
Motion made by: Estela Narrie **Seconded by:** Elaine Roque
The motion passed unanimously.

l. ECE 29 Reflective Practice Seminar (prerequisite: ECE 22 or ECE 23 or ECE 28) – presented by Gary Huff and Laura Manson
(Approved with minor changes)
Motion made by: Odemaris Valdivia **Seconded by:** Eve Adler
The motion passed unanimously.
Prerequisite: ECE 22 or ECE 23 or ECE 28
Motion made by: David Shirinyan **Seconded by:** Eve Adler
The motion passed unanimously.

m. ENGL 25 Intensive College Writing Skills (prerequisite: English assessment score of 155-189) – presented by Jason Beardsley
(Approved with change to the prerequisite to include a range of scores and other minor changes)
Motion made by: David Shirinyan **Seconded by:** Gita Runkle
The motion passed unanimously. (Maral Hyeler not present for vote.)
Prerequisite: English assessment score of 155-189
Motion made by: David Shirinyan **Seconded by:** Emily Lodmer
The motion passed unanimously. (Maral Hyeler not present for vote.)

(Distance Education)

n. ECE 24 Preschool and Early Primary Development – presented by Gary Huff and Laura Manson
(Approved with minor changes)
Motion made by: David Shirinyan **Seconded by:** William Konya
The motion passed unanimously.

o. ECE 25 Assessment in Transitional Kindergarten and Kindergarten – presented by Gary Huff and Laura Manson
(Approved with minor changes)
Motion made by: David Shirinyan **Seconded by:** William Konya
The motion passed unanimously.

p. ECE 26 CA Preschool Foundations and Frameworks 1 – presented by Gary Huff and Laura Manson
Motion made by: David Shirinyan **Seconded by:** William Konya
The motion passed unanimously.

q. CE 27 CA Preschool Foundations and Frameworks 2 – presented by Gary Huff and Laura Manson
Motion made by: David Shirinyan **Seconded by:** William Konya
The motion passed unanimously.

r. ECE 28 Practicum in Transitional Kindergarten Teaching – presented by Gary Huff and Laura Manson
Motion made by: David Shirinyan **Seconded by:** William Konya
The motion passed unanimously.

s. ECE 29 Reflective Practice Seminar – presented by Gary Huff and Laura Manson
Motion made by: David Shirinyan **Seconded by:** William Konya
The motion passed unanimously.

t. OFTECH 33 Records Management (formerly OIS 33) – presented by Odemaris Valdivia
(Approved with minor changes)
Motion made by: Elaine Roque **Seconded by:** James Pacchioli
The motion passed unanimously.

(New Programs)

u. Psychology Associate in Arts for Transfer (AA-T) – presented by David Shirinyan
(Approved with addition of Program Learning Outcomes)
Motion made by: Georgia Lorenz **Seconded by:** Estela Narrie
The motion passed unanimously.

VII. Adjournment

The meeting adjourned at 4:55pm.

Santa Monica College

Course Outline For
MATHEMATICS 7, Calculus 1

Course Title: Calculus 1 Units: 5.00
Total Instructional Hours (usually 18 per unit): 90
Hours per week (full semester equivalent) in Lecture: 5.00 In-Class Lab: 0 Arranged:

Date Submitted: May 2011
Date Updated: April 2017
Transferability: Transfers to UC
Transfers to CSU

IGETC Area:
- IGETC Area 2: Mathematical Concepts and Quantitative Reasoning
  - 2A: Mathematic

CSU GE Area:
- CSU GE Area B: Scientific Inquiry and Quantitative Reasoning (mark all that apply)
  - B4 - Mathematics/Quantitative Thinking

SMC GE Area:
- GENERAL EDUCATION PATTERN (SMC GE)
  - Area IV-B: Language and Rationality (Group B)

Degree Applicability: Credit - Degree Applicable
Prerequisite(s): MATH 2
or
(MATH 3 and MATH 4)
Pre/Corequisite(s): None
Corequisite(s): None
Skills Advisory(s): None

I. Catalog Description

This first course in calculus is intended primarily for science, technology, engineering and mathematics majors. Topics include limits, continuity, and derivatives and integrals of algebraic and trigonometric functions, with mathematical and physical applications.

II. Examples of Appropriate Text or Other Required Reading: (include all publication dates; for transferable courses at least one text should have been published within the last five years)

1. Calculus, The Classic Edition, Swokowski, Earl, Brooks/Cole Publishing ©

1991

2. Calculus, 8th , Stewart, James, Cengage Learning Co. © 2016, ISBN: 978-128-574-0621

III. Course Objectives

Upon completion of this course, the student will be able to:

1. Evaluate limits using basic limit theorems and the epsilon-delta definition.
2. State and apply the definition of continuity to determine a function's points of continuity and discontinuity.
3. Differentiate using basic derivative theorems, the definition of the derivative and implicit differentiation.
4. Integrate elementary functions using basic integral theorems and evaluate a definite integral as a limit using the definition of the definite integral.
5. Find the equation of the tangent line to the graph of a function.
6. Solve derivative application problems including optimization, related rates, linearization, sketching graphs of functions and rectilinear motion.
7. Solve integral application problems including area, volume, arc length and work.
8. State and apply the Mean Value theorems, Extreme Value Theorem, Intermediate Value Theorem, Fundamental Theorem of Calculus, and Newton's Method.

IV. Methods of Presentation:

Group Work , Lecture and Discussion

V. Course Content

% of course	Topic
8%	Review topics from precalculus
14%	Limits and continuity: epsilon-delta definition, computation of limits using numerical and graphical approaches, one-sided limits, limits involving infinity, definition & properties of continuous functions.
22%	Derivatives: definition, differentiability of functions, differentiation formulas: constants, power rule, product rule, quotient rule, derivatives of rational, trigonometric and inverse functions, Chain Rule, differentials and linearization, implicit differentiation, higher-order derivatives, tangent lines, interpretation of the derivative as a rate of change.
23%	Applications of the Derivative: extrema of functions, the Mean Value Theorem, the first and second derivative tests, graphing functions using first and second derivatives, concavity and asymptotes, optimization, rectilinear motion, Newton’s Method.

18%	Integrals: antiderivatives, indefinite integrals, Riemann sums, definite integrals, properties of the integral, integration by substitution, Fundamental Theorem of Calculus, Mean Value Theorem for Definite Integrals.
15%	Applications of the definite integral: area, volumes by slicing, disks, washers, cylindrical shells, arc length, work.
100%	Total

VI. Methods of Evaluation: (Actual point distribution will vary from instructor to instructor but approximate values are shown.)

Percentage	Evaluation Method
60 %	Exams/Tests - 4-6 Exams
30 %	Final exam
10 %	Other - Homework, quizzes, projects, class participation
100 %	Total

Additional Assessment Information:

Closed-book, closed-notes exams will be given to determine the student's mastery of the material. A comprehensive closed-book, closed-notes final exam will be given to assess student learning outcomes and knowledge of course objectives. A non-graphing scientific calculator chosen from a department-approved list may be permitted during exams as long as it is not a substitute for obtaining exact answers by mathematical procedures. At the discretion of the instructor, homework, quizzes, collaborative learning activities, class participation, or projects may be part of the evaluation process.

VII. Sample Assignments:

1. Let $f(x) = 3x^4 - 4x^3 + 6$. Find the local extrema of f using the second derivative test whenever possible. Find the intervals on which the graph of f is concave upward or is concave downward, and find the x-coordinates of the points of inflection. Sketch the graph of f.

2. Let R be the region bounded by the graphs of $y = \sqrt{x}$, $x = 1$, $x = 4$, $y = 0$. Set up integrals that can be used to find the volume of the solid generated if R is

revolved about the x-axis using (a) cylindrical shells and (b) disks or washers.

VIII. Student Learning Outcomes

1. Given an algebraic or trigonometric function, evaluate and apply limits and prove basic limit statements.
2. Given an algebraic or trigonometric function, differentiate the function and solve application problems involving differentiation.
3. Given an algebraic or trigonometric function, integrate the function and solve application problems involving integration.

Prerequisite / Corequisite Checklist and Worksheet

Mathematics, Math 7
Prerequisite: Mathematics, Math 3 ; Trigonometry with Applications
Other prerequisites, corequisites, and advisories also required for this course: (Please note that a separate sheet is required for each prerequisite, corequisite, or advisory)
Math 4; College Algebra for STEM majors

SECTION 1 - CONTENT REVIEW: If any criterion is not met, the prerequisite will be disallowed.

Criterion	Met	Not Met
1. Faculty with appropriate expertise have been involved in the determination of the prerequisite, corequisite or advisory.	**X**	
2. The department in which the course is (will be) taught has considered course objectives in accordance with accreditation standards.	**X**	
3. Selection of this prerequisite, corequisite or advisory is based on tests, the type and number of examinations, and grading criteria.	**X**	
4. Selection of this prerequisite, corequisite or advisory is based on a detailed course syllabus and outline of record, related instructional materials and course format.	**X**	
5. The body of knowledge and/or skills which are necessary for success before and/or concurrent with enrollment have been specified in writing.	**X**	
6. The course materials presented in this prerequisite or corequisite have been reviewed and determined to teach knowledge or skills needed for success in the course requiring this prerequisite.	**X**	
7. The body of knowledge and/or skills necessary for success in the course have been matched with the knowledge and skills developed by the prerequisite, corequisite or advisory.	**X**	
8. The body of knowledge and/or skills taught in the prerequisite are not an instructional unit of the course requiring the prerequisite.	**X**	
9. Written documentation that steps 1 to 8 above have been taken is readily available in departmental files.	**X**	

SECTION II - ADDITIONAL LEVEL OF SCRUTINY:

In addition to the affirmation of content review listed in section I, an additional level of scrutiny is also required. The level of scrutiny depends on which type of prerequisite is involved. There are six types and each is listed below. Please identify which one is being used to justify the proposed prerequisite. The additional level of scrutiny corresponding to each type of prerequisite is identified below.

X Type 2: Sequential within and across disciplines (e.g., Physics 7, 8, 9, …)
Complete the Prerequisite Worksheet

Prerequisite Worksheet

ENTRANCE SKILLS FOR **(Math 7)**

(What the student needs to be able to do or understand BEFORE entering the course in order to be successful)

A)	Determine domain, range, symmetry and inverse, if it exists, of a relation.
B)	Analyze and graph a given function, including but not limited to piecewise defined, polynomial, rational, exponential, logarithmic, trigonometric, and inverse trigonometric functions.
C)	Use transformation techniques including vertical and horizontal shifts, compression, stretching, and reflection over the x or y axis to sketch the graph of a function.
D)	Use the language and standard mathematical notation of the algebra of functions.
E)	Determine algebraic combinations and compositions of functions and state their domains.
F)	State and apply the unit-circle and right triangle definitions of trigonometric functions and their inverses.
G)	State and apply fundamental trigonometric identities and the sum, difference, double-angle and half-angle identities.
H)	Factor polynomials using rational and complex zeros.
I)	Solve polynomial, rational, exponential, logarithmic, trigonometric and inverse trigonometric equations.
J)	Write algebraic and trigonometric relationships to solve application problems, including solution of triangles.
K)	Prove trigonometric identities.
L)	Classify, analyze and graph conic sections given any quadratic equation in two variables. (Excludes rotation)
M)	Solve systems of nonlinear equations.
N)	Prove statements using mathematical induction.
O)	Apply the binomial theorem to expand a binomial and find required intermediate term.
P)	Use the language and notation of sequences and series. Determine any term in a sequence.
Q)	Evaluate, manipulate and interpret summation notation.

EXIT SKILLS (objectives) FOR **(Math 3)**

(What the student has the demonstrated ability to do or understand AFTER successful completion of this course)

1.	Recognize and use the vocabulary of angles.
2.	Use right triangles (including special triangles) to evaluate the six trigonometric functions of a given acute angle.
3.	Use the unit circle to define the six trigonometric functions of any given real number.
4.	Evaluate the six trigonometric functions of integral multiples of $\pi/6$ and $\pi/4$.
5.	Recognize and draw the graphs of the six trigonometric functions and their transformations.
6.	Find the inverse of a given trigonometric function.
7.	Use trigonometric identities to simplify trigonometric expressions and solve trigonometric equations.
8.	Find the solutions (if any) of a given trigonometric equation.
9.	Use properties of the trigonometric and inverse trigonometric functions, including the law of sines and the law of cosines, in applications.
10.	Graph a curve given in polar coordinates in the polar coordinate system.
11.	Solve equations in polar coordinates.
12.	Convert an equation given in polar coordinates to an equation in rectangular coordinates and vice versa.
13.	Use polar coordinates to perform algebraic operations involving complex numbers.
14.	Draw the graph of a curve given in parametric equations and indicate its orientation.
15.	Find the equation in rectangular coordinates of a given plane curve defined by two parametric equations.
16.	Find parametric equations for a plane curve given in rectangular coordinates.
17.	Perform operations involving vectors and their applications.

		ENTRANCE SKILLS FOR (Math 7)																
EXIT SKILLS FOR (Math 3)		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
	1																	
	2																	
	3						X											
	4																	
	5	X	X	X	X	X												
	6						X											
	7							X	X	X		X						
	8																	
	9										X							
	10																	
	11																	
	12												X					
	13																	
	14			X														
	15																	
	16																	
	17																	

Prerequisite / Corequisite Checklist and Worksheet

Mathematics, Math 7

Prerequisite: Mathematics, Math 4 ; College Algebra for STEM majors

Other prerequisites, corequisites, and advisories also required for this course: (Please note that a separate sheet is required for each prerequisite, corequisite, or advisory)

Math 3; Trigonometry with Applications

SECTION 1 - CONTENT REVIEW: If any criterion is not met, the prerequisite will be disallowed.

Criterion	Met	Not Met
1. Faculty with appropriate expertise have been involved in the determination of the prerequisite, corequisite or advisory.	**X**	
2. The department in which the course is (will be) taught has considered course objectives in accordance with accreditation standards.	**X**	
3. Selection of this prerequisite, corequisite or advisory is based on tests, the type and number of examinations, and grading criteria.	**X**	
4. Selection of this prerequisite, corequisite or advisory is based on a detailed course syllabus and outline of record, related instructional materials and course format.	**X**	
5. The body of knowledge and/or skills which are necessary for success before and/or concurrent with enrollment have been specified in writing.	**X**	
6. The course materials presented in this prerequisite or corequisite have been reviewed and determined to teach knowledge or skills needed for success in the course requiring this prerequisite.	**X**	
7. The body of knowledge and/or skills necessary for success in the course have been matched with the knowledge and skills developed by the prerequisite, corequisite or advisory.	**X**	
8. The body of knowledge and/or skills taught in the prerequisite are not an instructional unit of the course requiring the prerequisite.	**X**	
9. Written documentation that steps 1 to 8 above have been taken is readily available in departmental files.	**X**	

SECTION II - ADDITIONAL LEVEL OF SCRUTINY:

In addition to the affirmation of content review listed in section I, an additional level of scrutiny is also required. The level of scrutiny depends on which type of prerequisite is involved. There are six types and each is listed below. Please identify which one is being used to justify the proposed prerequisite. The additional level of scrutiny corresponding to each type of prerequisite is identified below.

X Type 2: Sequential within and across disciplines (e.g., Physics 7, 8, 9, …)
Complete the Prerequisite Worksheet

Prerequisite Worksheet

ENTRANCE SKILLS FOR **(Math 7)**

(What the student needs to be able to do or understand BEFORE entering the course in order to be successful)

A)	Determine domain, range, symmetry and inverse, if it exists, of a relation.
B)	Analyze and graph a given function, including but not limited to piecewise defined, polynomial, rational, exponential, logarithmic, trigonometric, and inverse trigonometric functions.
C)	Use transformation techniques including vertical and horizontal shifts, compression, stretching, and reflection over the x or y axis to sketch the graph of a function.
D)	Use the language and standard mathematical notation of the algebra of functions.
E)	Determine algebraic combinations and compositions of functions and state their domains.
F)	State and apply the unit-circle and right triangle definitions of trigonometric functions and their inverses.
G)	State and apply fundamental trigonometric identities and the sum, difference, double-angle and half-angle identities.
H)	Factor polynomials using rational and complex zeros.
I)	Solve polynomial, rational, exponential, logarithmic, trigonometric and inverse trigonometric equations.
J)	Write algebraic and trigonometric relationships to solve application problems, including solution of triangles.
K)	Prove trigonometric identities.
L)	Classify, analyze and graph conic sections given any quadratic equation in two variables. (Excludes rotation)
M)	Solve systems of nonlinear equations.
N)	Prove statements using mathematical induction.
O)	Apply the binomial theorem to expand a binomial and find required intermediate term.
P)	Use the language and notation of sequences and series. Determine any term in a sequence.
Q)	Evaluate, manipulate and interpret summation notation.

EXIT SKILLS (objectives) FOR **(Math 4)**

(What the student has the demonstrated ability to do or understand AFTER successful completion of this course)

1.	Determine whether a relation represents a function. If it is a function, determine its domain and range, determine whether it is odd, even or neither based on its formula or its graph; and determine whether it is one-to-one, and if it is, determine its inverse function.
2.	Analyze and graph a given function, including but not limited to piecewise-defined, polynomial, rational, exponential, and logarithmic functions, without the aid of graphing devices. Determine intercepts, coordinates of holes, and equations of asymptotes. Determine intervals on which polynomial and rational functions are positive and negative.
3.	Use transformation techniques including vertical and horizontal shifts, compression, stretching, and reflection over the x or y axis to sketch the graph of a relation.
4.	Use the language and standard mathematical notation of algebra of functions.
5.	Determine algebraic combinations and compositions of functions and state their domains. Write a given function as a composition of two non-identity functions.
6.	Use techniques including synthetic division and long division, and results including the Fundamental Theorem of Algebra, the Intermediate Value Theorem, and the Rational Zeros Theorem to find all complex zeros of a polynomial function of degree greater than two, and write the function in completely factored form.
7.	Apply functions and algebraic techniques to model real world STEM applications.
8.	Solve polynomial, rational, exponential, and logarithmic equations.
9.	Express a quadratic equation in variables x and y, with no xy term, in standard form in order to classify its graph. Analyze conics algebraically and graphically by identifying important characteristics.
10.	Find terms of explicitly and recursively defined sequences including but not limited to arithmetic and geometric.
11.	Evaluate, manipulate and interpret summation notation.
12.	Prove statements using mathematical induction.
13.	Apply the binomial theorem to expand whole number powers of a binomial and find a required term.
14.	Synthesize multiple skills and techniques in order to solve complex, multi-step problems.
15.	Solve systems of linear equations in at least three variables using matrix row reduction.
16.	Solve inequalities including but not limited to absolute value, polynomial, and rational. Express the solution of an inequality using interval notation, set builder notation and graphing on a number line.
17.	Solve nonlinear systems of equations and inequalities.
18.	Solve application problems involving exponential and logarithmic functions or equations.

		ENTRANCE SKILLS FOR (Math 7)																
EXIT SKILLS FOR (Math 4)		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
	1	x																
	2		x															
	3			x														
	4				x													
	5					x												
	6								x									
	7																	
	8									x								
	9												x					
	10																x	
	11																	x
	12														x			
	13															x		
	14																	
	15																	
	16																	
	17													x				
	18																	

Santa Monica College
New SMC Course
Expanded Course Outline for GEOG 25 - Introduction to Cartography

Course Cover	
Discipline	GEOG-GEOGRAPHY
Course Number	25
Full Course Title	Introduction to Cartography
Catalog Course Description	This course provides a general introduction to Cartography, broadly defined as the art, science, and ethics of map making and map use. The emphases include map scale, map projection, reference and thematic map reading, symbolization and map design. A variety of modern geospatial technologies and tools are covered, including GIS, GPS, Remote Sensing, and web mapping. The course includes both lecture and hands-on application.
Rationale	Map reading and map making knowledge and skills are essential for geographers. Modern geospatial technologies have greatly promoted the vast advances in Cartography in the past two decades. This course will focus on introducing basic knowledge and skills of map reading and map making to students. It also covers the most recent technology development in contemporary Cartography.
Proposal Information	
Proposed Start	Year: 2018 Semester: Spring
Proposed for Distance Ed	No
Proposed for Global Citizenship	No
Course Unit/Hours	
Variable Hour Exist	NO
Credit Hours	Min: 3.00
Weekly Lecture Hours	Min: 3.00 (Sem: 54)
Weekly Laboratory Hours	Min: 0
Total Semester Instructional Hours	54.00
Load Factor	1.00
Repeatability	May be repeated 0 time(s)
Grading Methods	Letter Grade or P/NP
Transfer/General Ed	
Transferability	
Transfers to CSU	
IGETC Area:	
CSU GE Area:	
SMC GE Area:	
Does NOT satisfy any area of SMC GE:	
Program Applicability	

Designation	Credit - Degree Applicable
Proposed For	**Department Certificate** -Geospatial Technology (forthcoming)

Course Objectives
Upon satisfactory completion of the course, students will be able to:
1. Locate and critically use geographic information from various sources.
2. Recognize, read and appropriately use different types of maps.
3. Define and explain basic principles of cartographic design, such as scale, projections, generalization, and symbolization.
4. Use basic modern map making technologies and tools to make thematic maps, and use the maps to better understand the spatial patterns in geography.

Course Content	
25%	Cartography basics (projections, scale, generalization, symbolization, typography, and visual hierarchy)
25%	Thematic map reading and map making (Choropleth Maps, Proportional Symbol Maps, Dot Maps and Dasymetric Maps, Isoline Maps, Cartograms, Flow Maps)
25%	Data aquisition techologies: Remote Sensing, GPS and Volunteered Geographic Information (VGI)
25%	Map making technologies: GIS and WebGIS tools (Desktop GIS software including ArcGIS and QGIS, WebGIS including ArcGIS online, ArcGIS Story Map, Openlayers and Mapbox).
Total: 100%	

Methods of Presentation	
Methods	Lecture and Discussion
Other Methods	Assignment exercises, student projects

Methods of Evaluation	
Methods	• 25% - Class Work 5 in-class, hands-on activities • 30% - Exams/Tests 3 tests • 20% - Final Project Final Project Implementation and Presentation • 25% - Homework 5 homework assignments • 100% - Total

Appropriate Textbooks	
Textbooks such as the following are appropriate:	
Formatting Style	MLA
Textbooks	
1. Shellito, B.. *Introduction to Geospatial Technologies*, 3rd ed. W. H. Freeman, 2015, ISBN: 978-1464188725.	
2. Fu, P.. *Getting to know WebGIS*, 1st ed. ESRI Press, 2015, ISBN: 978-1589483842.	

3. Monmonier, M., H. de Blij. *How to Lie with Maps*, 2nd ed. University Of Chicago Press, 1996, ISBN: 978-0226534213.

4. Slocum, T.A., et al.. *Thematic Cartography and Geovisualization*, 3rd ed. Pearson, 2008, ISBN: 978-0132298346.

5. Crampton, J.. *Mapping: A Critical Introduction to Cartography and GIS*, 1st ed. Wiley-Blackwell, 2010, ISBN: 978-1405121736.

Assignments

Sample Assignment

1. This assignment introduces students to map projections. The process of map projections transforms the 3D surface of the spherical earth into a flat, 2D surface. There are an infinite number of ways to project maps, and every map projection distorts something: area, angle, direction, and distance. This assignment has two parts. Part-I will teach students how to change and understand projection in ArcGIS, and Part II will ask the student to select an appropriate map projection given a specific defined use of a map.
2. Use multiband Landsat Enhanced Thematic Mapper Plus (ETM+) imagery and various tools for analyzing and enhancing the data. Working with the appropriate software and brightness values for particular Landsat ETM+ imagery, student will perform various tasks including increasing the contrast between various bands through the “Standard Deviation” histogram, identifying specific features on the Earth’s surface, producing false color band combination, and calculating a Normalized Difference Vegetation Index (NDVI). Student will produce a thematic map of NDVI in the area of interest.
3. Read and analyze the provided web-animated map from the following aspects: base map, thematic layers, and interactive elements in the map. Provide suggestions to improve the presentation of the map.

Student Learning Outcomes

1. Student will be able to produce a thematic map using cartographic principles of design, including appropriate symbolization and generalization.

2. Student will understand new data acquisition technologies for map making and will be able to appropriately use data from various sources.

3. Students will be able to access, interpret and use maps from a variety of print and electronic media, including online maps.

Minimum Qualification

Minimum Qualifications:	Geography (Masters Required)

Library

List of suggested materials has been given to librarian?	No
Library has adequate materials to support course?	No

Santa Monica College
New SMC Course
Expanded Course Outline for GIS 26 - Introduction to Remote Sensing

Course Cover	
Discipline	GIS-GEOGRAPHIC INFORMATION SYSTEMS
Course Number	26
Full Course Title	Introduction to Remote Sensing
Catalog Course Description	This course introduces students to the basic concepts of remote sensing, characteristics of remote sensors, and remote sensing applications in academic disciplines and professional industries. Emphasis is placed on remote sensing data acquisition; digital image processing and interpretation. The course is designed for students interested in the Earth Observing System, environmental monitoring techniques, and image analysis.
Rationale	Remote sensing is a fast-growing field. The Earth Observing System and the data sets have been widely used in Land-use/Land-cover change study, Oceanography, Meteorology, Hydrology, and Environmental monitoring. Knowledge and skills introduced in this course are the key components in modern Earth Science knowledge structure. The course will also help students better understand our fast changing Earth environment across large spatial scales.

Proposal Information	
Proposed Start	Year: 2018 Semester: Spring
Proposed for Distance Ed	No
Proposed for Global Citizenship	No

Course Unit/Hours	
Variable Hour Exist	NO
Credit Hours	Min: 3.00
Weekly Lecture Hours	Min: 3.00 (Sem: 54)
Total Semester Instructional Hours	54.00
Load Factor	1.00
Repeatability	May be repeated 0 time(s)
Grading Methods	Letter Grade or P/NP

Transfer/General Ed
Transferability
Transfers to CSU
IGETC Area:
Does NOT satisfy any area of IGETC:
CSU GE Area:
Does NOT satisfy any area of CSU GE:
SMC GE Area:
Does NOT satisfy any area of SMC GE:

Program Applicability	
Designation	Credit - Degree Applicable

Proposed For	**Department Certificate** -Geospatial Technology (forthcoming)
Course Objectives	
Upon satisfactory completion of the course, students will be able to:	
1. Define and describe remote sensing and explain its applications and history.	
2. Define and describe basics of electromagnetic spectrum and interactions with various types of media.	
3. Describe sensors and image acquisition methods.	
4. Analyze and explain remote sensing purposes, advantages, and limitations.	
5. Describe basic characteristics of remote sensing imagery.	
6. Describe industry-specific image sources.	
7. Apply basic digital image processing and interpretation techniques to obtain useful information from remote sensing images.	
Course Content	
5%	History of remote sensing for earth observation
20%	Remote Sensing Basics: Electromagnetic Radiation, Atmospheric Energy-Matter Interactions, Remote Sensing Process, Remote Sensing Data Collection, Earth Observing System (EOS).
10%	Satellite-based Sensors in Visible and Infrared Wavelengths.
10%	Active Sensors: Radar and Lidar
10%	Aerial Imagery and Visual Interpretation
10%	GIS Integration
15%	Digital Image Processing and Intepretation: Image Restoration and Rectification; Image Enhancement; Image Classification.
20%	Remote Sensing Applications
Total: 100%	
Methods of Presentation	
Methods	Lecture and Discussion
Other Methods	Exercises, Homework assignments
Methods of Evaluation	
Methods	• 40% - Exams/Tests 4 Exams • 30% - Final Project An integrated project to synthesize knowledge and skills learned throughout semester • 30% - Homework 6 homework exercises • 100% - Total
Appropriate Textbooks	
Textbooks such as the following are appropriate:	
Formatting Style	MLA
Textbooks	
1. Jensen,J.R.. *Introductory Digital Image Processing: A Remote Sensing Perspective*,	

4th ed. Pearson, 2015, ISBN: 978-0134058160.
2. Lillesand, T., R.W. Kiefer, J. Chipman. . *Remote Sensing and Image Interpretation*, 7th ed. Wiley, 2015, ISBN: 978-1118343289.
3. Campbell, J.B., R.H. Wynne. *Introduction to Remote Sensing*, 5th ed. The Guilford Press, 2011, ISBN: 978-1609181765.

Assignments

Sample Assignment

Knowledge-focused Assignment example:

1. Explain the process of supervised classification with different techniques.
2. Differentiate unsupervised classification and supervised classification.
3. What is contrast enhancement and explain different methods of enhancing contrast.
4. How can RS and GIS be used in an integrated manner in the field of agriculture/urban planning/climate change.

Skill-focused Assignment Example:

The purpose of this exercise is to let students get familiar with major types of satellite remote sensing images.

1. Open an image in lab1 image collection with ENVI software and examine the following information: file size, the sensor used to capture this image, Date and Time, EMR bands, swath width.
2. Display the image with gray scale, and describe the general environment shown in this image.
3. Use the Image Enhensing Tool to perform a user-defined linear stretch on the image.
4. Load the 3 available bands into the R, G, B fields and perform a color image analysis.

Student Learning Outcomes

1. Understand basic concepts of Remote Sensing.
2. Describe commonly used remote sensing sensors and image acquisition methods.
3. Apply basic digital image processing and interpretation methods to extract useful information from remote sensing images
4. Describe the application of remote sensing in various fields, including forest management, water resources, agriculture, global environmental science.

Minimum Qualification

Minimum Qualifications:	Geography (Masters Required)

Library

List of suggested materials has been given to librarian?	No
Library has adequate materials to support course?	No

Santa Monica College
New SMC Course
Expanded Course Outline for GIS 27 - Applications in GIS

Course Cover	
Discipline	GIS-GEOGRAPHIC INFORMATION SYSTEMS
Course Number	27
Full Course Title	Applications in GIS
Catalog Course Description	This course focuses on utilizing Geographic Information Systems (GIS) to solve real world problems such as disaster management, crime analysis, environmental sustainability analysis, and marketing. Students will use ArcGIS and other open source GIS software to process, analyze and map geospatial data, extract geospatial information, and develop geospatial wisdom. Emphasis is placed on developing geospatial thinking and utilizing GIS to answer geospatial questions.
Rationale	GIS knowledge and skills are required by many job opportunities dealing with spatial information. This class will provide students opportunities to utilize GIS in specific domains of interest. Students will gain in-depth working experience with GIS, which will greatly increase their competence in job market. This class will serve as a capstone class for student to get the Geospatial Technology Certificate.
Proposal Information	
Proposed Start	Year: 2018 Semester: Spring
Proposed for Distance Ed	No
Proposed for Global Citizenship	No
Course Unit/Hours	
Variable Hour Exist	NO
Credit Hours	Min: 3.00
Weekly Lecture Hours	Min: 3.00 (Sem: 54)
Total Semester Instructional Hours	54.00
Load Factor	1.00
Repeatability	May be repeated 0 time(s)
Grading Methods	Letter Grade or P/NP
Transfer/General Ed	
Transferability	
IGETC Area:	
CSU GE Area:	
SMC GE Area:	
Program Applicability	
Designation	Credit - Degree Applicable

Proposed For	**Department Certificate** -Geospatial Technology (forthcoming)
Pre/Corequisites & Advisories	
Skills Advisory GIS 20 or **Skills Advisory** GEOG 20	
Course Objectives	
Upon satisfactory completion of the course, students will be able to:	
1. Demonstrate a basic, practical knowledge of GIS concepts, techniques and real world applications.	
2. Form real world geospatial questions and choose appropriate spatial analysis methods to answer those questions.	
3. Use basic GIS spatial analysis tools, including: Spatial Analyst, Network Analyst, and 3-D Analyst.	
4. Identify the variety of GIS career options.	
Course Content	
10%	GIS and Cartography Reviews
10%	Thinking spatially and asking geographic questions
10%	GIS project management concepts and practice
10%	Locate, evaluate and process the existing data sources for use in a GIS project
20%	Creating one's own spatial data through digitizing and from tabular information
10%	Perform basic spatial analysis (attribute and spatial queries, buffering, overlays) to answer basic geographic questions
10%	Use model builder tools to synthesize a geospatial model to answer complex geographic questions
10%	Produce high-quality maps and associated graphics and text that clearly communicate spatial information and analyses
10%	Presenting and critiquing projects
Total: 100%	
Methods of Presentation	
Methods	Lecture and Discussion
Other Methods	Exercises, student projects
Methods of Evaluation	
Methods	• 25% - Homework • 10% - Other Critiques and Student mutual evaluation

	• 40% - Projects 10% project proposal, 10% mid-term report, 20% final outcomes and presentation • 25% - Quizzes • 100% - Total

Appropriate Textbooks

Textbooks such as the following are appropriate:

Formatting Style	MLA

Textbooks

1. Tomaszewski, B.. *Geographic Information Systems (GIS) for Disaster Management*, 1 ed. CRC Press, 2014, ISBN: 9781482211689.

2. Brimicombe, A.. *GIS, Environmental Modeling and Engineering*, 2 ed. CRC Press, 2010, ISBN: 9781439808702.

3. Gorr, W., K. Kurland. *GIS Tutorial for Crime Analysis*, 2nd ed. ESRI Press, 2012, ISBN: 978-1589482142.

4. Allen, D.. *GIS Tutorial 2: Spatial Analysis Workbook*, ed. ESRI Press, 2015, ISBN: 978-1589483378.

5. Zhu, X.. *GIS for Environmental Applications: A practical approach*, 1st ed. Routledge, 2016, ISBN: 978-0415829076.

6. Radke, S., Hanebuth, E.. *GIS Tutorial for Homeland Security* , 1st ed. Esri Press, 2008, ISBN: 978-1589481886.

Assignments

Sample Assignment

Assignment 1:

Students will be guided into developing geospatial thinking by analyzing a given map (e.g. air quality map of Los Angeles) and answering the following questions:

1. Theme: This map is about _____; the color coding and symbols on this map are about _____
2. Where (make observations): What do you see on this map? What spatial pattern do you observe? What outliers can you spot?
3. Why there (form geospatial questions): Based on your observations, why is the phenomenon demonstrate the spatial patterns shown on the map? In other words, what natural and/or social-economic factors may explain the layout of the spatial patterns?
4. Improve: What other factors do you think may explain the locations of outlier? What other natural/social-economic data you may want to add to improve the analysis?

Assignment 2:

The Universal Soil Loss Equation (USLE) is a widely used mathematical model that describes soil erosion processes. It is composed of six factors to predict the long-term average annual soil loss (A). The six factors are the rainfall erosivity factor (R), the soil

erodibility factor (K), the topographic factors (L and S) and the cropping management factors (C and P). The equation takes the simple product form: A=R*K*L*S*C*P

Use the Model Builder in ArcGIS to produce a workflow of spatial analysis methods that need to be used in the modeling process. Run your workflow and produce the soil loss map in your study area.

Student Learning Outcomes
1. Student will be able to apply geospatial thinking to develop location-based questions from real world problems
2. Student will demonstrate knowledge of the basic steps to establish and manage a GIS project
3. Student will be able to appropriately choose, process and use various GIS data sources
4. Student will be able to create their own geospatial data and metadata, and manage them along with the data from other sources in a geospatial database.
5. Student will be able to apply appropriate GIS tools in the interpretation and analysis of geographical data
6. Student will be able to present the outcomes of a GIS project with appropriate map designs, graphics, texts and web-based interactions

Minimum Qualification	
Minimum Qualifications:	Geography (Masters Required)

Library	
List of suggested materials has been given to librarian?	No
Library has adequate materials to support course?	No

ADVISORY Checklist and Worksheet

GIS 27 Applications in GIS

Proposed Advisory: GEOG/GIS 20 Introduction to Geographic Information Systems

SECTION 1 - CONTENT REVIEW:

Criterion	N/A	Yes	No
1. Faculty with appropriate expertise have been involved in the determination of the advisory.		√	
2. The department in which the course is (will be) taught has considered course objectives in accordance with accreditation standards.		√	
3. Selection of this advisory is based on tests, the type and number of examinations, and grading criteria.		√	
4. Selection of this advisory is based on a detailed course syllabus and outline of record, related instructional materials and course format.		√	
5. The body of knowledge and/or skills which are recommended for success before enrollment have been specified in writing (see below).		√	
6. The course materials presented in this advisory have been reviewed and determined to teach knowledge or skills recommended for success in the course requiring this advisory.		√	
7. The body of knowledge and/or skills recommended for success in this course have been matched with the knowledge and skills developed by the advisory course.		√	
8. The body of knowledge and/or skills taught in the advisor are not an instructional unit of this course.		√	
9. Written documentation that steps 1 to 8 above have been taken is readily available in departmental files.			√

Advisory Worksheet

ENTRANCE SKILLS RECOMMENDED FOR SUCCESS IN: GIS 27 Applications in GIS

(It is recommended that the student to be able to do or understand the following BEFORE entering the course)

A)	Fundamental knowledge of GIS, including the components of geographic information, geographic coordinate systems, map elements, map projection, map scale, and spatial analysis.
B)	Basic knowledge of the main GIS data sources
C)	Basic skills of using GIS software such as ArcMap
D)	Basic knowledge on how to plan, execute and evaluate a GIS project

EXIT SKILLS (objectives) FROM GEOG/GIS 20 Introduction to Geographic Information Systems

(What the student has the demonstrated ability to do or understand AFTER successful completion of this course)

1.	Demonstrate a fundamental cartographic knowledge of map projections, scale, coordinates and mapping accuracy
2.	Explain geographic data's four components: position, attributes, spatial relationships and time to aid in retrieving, manipulating, analyzing and displaying spatially-referenced data.
3.	Demonstrate a working knowledge of GIS software and associated hardware to determine appropriate use of the technology.
4.	Plan, evaluate and execute a GIS project a.Identify a problem of a geospatial nature b.Outline a strategy to solve the problem c.Locate relevant data sources d.Design and evaluate a plan to acquire the relevant data sources e.Incorporate data sources into a Geographic Information System and execute strategy to solve a geospatial problem f.Apply principles of spatial analysis g.Present results
5.	Evaluate the capabilities of various GIS software programs.
6.	Identify and evaluate GIS data sources and the importance of metadata.
7.	Demonstrate the process of converting analogue data to digital data for use in a GIS
8.	Identify, compare and contrast vector and raster GIS.
9.	Apply spatial analysis functions on a GIS to solve a Geospatial problem.

	RECOMMENDED ENTRANCE SKILLS FOR GIS 27								
EXIT SKILLS FOR GEOG/GIS 20		A	B	C	D	E	F	G	H
	1	X							
	2	X							
	3			X					
	4				X				
	5				X				
	6		X						
	7		X						
	8		X						
	9	X							

Santa Monica College
New SMC Course
Expanded Course Outline for MATH 4 - College Algebra for STEM Majors

Course Cover	
Discipline	MATH-MATHEMATICS
Course Number	4
Full Course Title	College Algebra for STEM Majors
Catalog Course Description	The topics to be covered include review of the fundamentals of algebra, relations, functions, solutions of first and second degree equations and inequalities, systems of equations, matrices, binomial theorem, mathematical induction, polynomial and rational functions, exponential and logarithmic functions, analytic geometry and conic sections, and geometric and arithmetic sequences and series.
Rationale	College Algebra and Trigonometry together will serve as an alternative to pre-Calculus (Math 2) to fulfill the prerequisite requirement for Calculus 1. Math 2, a combination of college algebra and trigonometry, has a low success rate. Students could potentially master one of the two subject areas, but fail the course and have no option other than repeating the whole course again. Students, who transfer to SMC from other colleges and are placed in Math 2, may lack knowledge in only one of the two subject areas. College Algebra and Trigonometry courses have been created to increase the number of students who can qualify for Calculus 1 and also help students who lack knowledge in one of the two subject areas.
Proposal Information	
Proposed Start	Year: 2017 Semester: Spring
Proposed for Distance Ed	No
Proposed for Global Citizenship	No
Course Unit/Hours	
Variable Hour Exist	NO
Credit Hours	Min: 4.00
Weekly Lecture Hours	Min: 4.00 (Sem: 72)
Total Semester Instructional Hours	72.00
Load Factor	1.00
Repeatability	May be repeated 0 time(s)
Grading Methods	Letter Grade or P/NP
Transfer/General Ed	
Transferability	
Transfers to UC (pending review) Transfers to CSU	
IGETC Area:	
(pending review)	

- IGETC Area 2: Mathematical Concepts and Quantitative Reasoning
  - 2A: Mathematic

CSU GE Area:

(pending review)

- CSU GE Area B: Scientific Inquiry and Quantitative Reasoning (mark all that apply)
  - B4 - Mathematics/Quantitative Thinking

SMC GE Area:

- GENERAL EDUCATION PATTERN (SMC GE)
  - Area IV-B: Language and Rationality (Group B)

Comparable Transfer Courses:

Program Applicability

Designation	Credit - Degree Applicable
Proposed For	

Pre/Corequisites & Advisories

Prerequisite
MATH 20

Skills Advisory
Eligibility for English 1

Course Objectives

Upon satisfactory completion of the course, students will be able to:

1. Determine whether a relation represents a function. If it is a function, determine its domain and range, determine whether it is odd, even or neither based on its formula or its graph; and determine whether it is one-to-one, and if it is, determine its inverse function.
2. Analyze and graph a given function, including but not limited to piecewise-defined, polynomial, rational, exponential, and logarithmic functions, without the aid of graphing devices. Determine intercepts, coordinates of holes, and equations of asymptotes. Determine intervals on which polynomial and rational functions are positive and negative.
3. Use transformation techniques including vertical and horizontal shifts, compression, stretching, and reflection over the x or y axis to sketch the graph of a relation.
4. Use the language and standard mathematical notation of algebra of functions.
5. Determine algebraic combinations and compositions of functions and state their domains. Write a given function as a composition of two non-identity functions.
6. Use techniques including synthetic division and long division, and results including the Fundamental Theorem of Algebra, the Intermediate Value Theorem, and the Rational Zeros Theorem to find all complex zeros of a polynomial function of degree greater than two, and write the function in completely factored form.

7. Apply functions and algebraic techniques to model real world STEM applications.
8. Solve polynomial, rational, exponential, and logarithmic equations.
9. Express a quadratic equation in variables x and y, with no xy term, in standard form in order to classify its graph. Analyze conics algebraically and graphically by identifying important characteristics.
10. Find terms of explicitly and recursively defined sequences including but not limited to arithmetic and geometric.
11. Evaluate, manipulate and interpret summation notation.
12. Prove statements using mathematical induction.
13. Apply the binomial theorem to expand whole number powers of a binomial and find a required term.
14. Synthesize multiple skills and techniques in order to solve complex, multi-step problems.
15. Solve systems of linear equations in at least three variables using matrix row reduction.
16. Solve inequalities including but not limited to absolute value, polynomial, and rational. Express the solution of an inequality using interval notation, set builder notation and graphing on a number line.
17. Solve nonlinear systems of equations and inequalities.
18. Solve application problems involving exponential and logarithmic functions or equations.

Course Content	
4%	Review of basic concepts of algebra
22%	Functions, graphing techniques, graphing functions
5%	Application and mathematical models
21%	Theory and graphs of polynomial and rational functions
16%	Exponential and logarithmic functions, models, graphing
10%	Systems of equations and matrices
10%	Conic sections
12%	Sequences, series, mathematical induction, binomial theorem
Total: 100%	

Methods of Presentation	
Methods	Lecture and Discussion
Other Methods	Collaborative activities

Methods of Evaluation	
Methods	• 60% - Exams/Tests 3 to 5 Exams • 30% - Final exam • 10% - Homework Homework, quizzes, collaborative activities • 100% - Total
Additional Assessment	Closed-book, closed-notes exams will be given to determine the student's mastery of the material. A comprehensive closed-book,

Information (Optional)	closed-notes final exam will be given to assess student learning outcomes and knowledge of course objectives. At the instructor's discretion, a scientific calculator may be used during exams as long as it is not a substitute for obtaining exact answers by mathematical procedures. It is highly recommended that homework be collected. At the discretion of the instructor, homework, quizzes, collaborative learning activities, class participation, or projects may be part of the evaluation process.

Appropriate Textbooks

Textbooks such as the following are appropriate:

Formatting Style	APA

Textbooks

1. Beecher, Penna, and Bittinger. *College Algebra*, 5th ed. Pearson, 2016

Assignments

Student Learning Outcomes

1. Given a rational, exponential or logarithmic function, analyze the function and create a graph including key information such as shape, intercepts, removable discontinuities, asymptotes, and crossing asymptotes.
2. Solve equations and inequalities involving rational, exponential and logarithmic functions.
3. Given an English-language description of a mathematical, social, practical or physical situation, determine a function, equation, or inequality that models the situation, and use numerical information to solve the problem.

Minimum Qualification

Minimum Qualifications:	Mathematics (Masters Required)

Library

List of suggested materials has been given to librarian?	No
Library has adequate materials to support course?	Yes

Sample Assignments
1. Find the domain of the given function. Express the answer using both interval notation and set builder notation. $$f(x)=\sqrt{\frac{x+3}{x-1}}$$
2. Solve the logarithmic equation: $$\log_3(x-4)+\log_3(x+3)=2$$
3. Given the piecewise function: $$g(x)=\begin{cases} x^2-1 & \text{if } x\le 0 \\ 2x+1 & \text{if } 0<x<2 \\ 5 & \text{if } x>2 \end{cases}$$ **a.** Find the domain of the function. **b.** Find all the intercepts of the graph of the function. **c.** Sketch the graph of the function.
4. A square piece of tin 18 inches on each side is to be made into a box without a top by cutting a square from each corner and folding up the flaps to form the sides. What size squares should be cut so that the volume of the box is 432 cubic inches?

Prerequisite / Corequisite Checklist and Worksheet

Mathematics, Math 4

Prerequisite: Mathematics, Math 20; Intermediate Algebra

Other prerequisites, corequisites, and advisories also required for this course: skills advisory: eligibility for English 1

SECTION 1 - CONTENT REVIEW: If any criterion is not met, the prerequisite will be disallowed.

Criterion	Met	Not Met
1. Faculty with appropriate expertise have been involved in the determination of the prerequisite, corequisite or advisory.	X	
2. The department in which the course is (will be) taught has considered course objectives in accordance with accreditation standards.	X	
3. Selection of this prerequisite, corequisite or advisory is based on tests, the type and number of examinations, and grading criteria.	X	
4. Selection of this prerequisite, corequisite or advisory is based on a detailed course syllabus and outline of record, related instructional materials and course format.	X	
5. The body of knowledge and/or skills which are necessary for success before and/or concurrent with enrollment have been specified in writing.	X	
6. The course materials presented in this prerequisite or corequisite have been reviewed and determined to teach knowledge or skills needed for success in the course requiring this prerequisite.	X	
7. The body of knowledge and/or skills necessary for success in the course have been matched with the knowledge and skills developed by the prerequisite, corequisite or advisory.	X	
8. The body of knowledge and/or skills taught in the prerequisite are not an instructional unit of the course requiring the prerequisite.	X	
9. Written documentation that steps 1 to 8 above have been taken is readily available in departmental files.	X	

SECTION II - ADDITIONAL LEVEL OF SCRUTINY:

In addition to the affirmation of content review listed in section I, an additional level of scrutiny is also required. The level of scrutiny depends on which type of prerequisite is involved. There are six types and each is listed below. Please identify which one is being used to justify the proposed prerequisite. The additional level of scrutiny corresponding to each type of prerequisite is identified below.

X Type 2: Sequential within and across disciplines (e.g., Physics 7, 8, 9, …)
Complete the Prerequisite Worksheet

Prerequisite Worksheet

ENTRANCE SKILLS FOR **(Math 4)**

(What the student needs to be able to do or understand BEFORE entering the course in order to be successful)

A)	Simplify advanced numerical and algebraic expressions involving multiple operations.
B)	Solve linear, quadratic, rational and absolute value inequalities, graph their solution sets, and express the answer in interval notation.
C)	Solve literal equations for a designated variable.
D)	Solve linear, quadratic form, cubic, radical, rational, absolute value, elementary exponential and elementary logarithmic equations.
E)	Apply algorithms of completing the square, rationalizing the denominator, and long division and synthetic division of polynomials.
F)	Graph the solution sets of systems of linear equations and inequalities.
G)	Perform operations on complex numbers.
H)	Determine the sum, difference, product and quotient of functions and determine their domains.
I)	Determine the composition of elementary functions.
J)	Use proper mathematical notation to evaluate functions and obtain their inverses.
K)	State and apply the fundamental properties of exponents and logarithms.
L)	Demonstrate knowledge of standard vocabulary associated with graphing, including but not limited to slopes of lines, intercepts, vertices of parabolas, asymptotes, and interplay between graph and functional notation.
M)	Determine, given its graph, whether a relation is a function and whether it is one-to-one, and determine its intercepts and domain and range.
N)	Graph and determine the domain and range of linear, quadratic, simple cubic, radical, reciprocal, absolute value, exponential and logarithmic functions.
O)	Graph circles and parabolas using horizontal and vertical translation.
P)	Set up and solve practical applications of the algebraic material.
Q)	Determine the distance between two given points in the Cartesian plane, and find the midpoint of the line segment joining them.

EXIT SKILLS (objectives) FOR **(Math 20)**

(What the student has the demonstrated ability to do or understand AFTER successful completion of this course)

1.	Simplify advanced numerical and algebraic expressions involving multiple operations.
2.	Solve linear, quadratic, rational and absolute value inequalities, graph their solution sets, and express the answer in interval notation.
3.	Solve literal equations for a designated variable.
4.	Solve linear, quadratic form, cubic, radical, rational, absolute value, elementary exponential and elementary logarithmic equations.
5.	Apply algorithms of completing the square, rationalizing the denominator, and long division and synthetic division of polynomials.
6.	Graph the solution sets of systems of linear inequalities.
7.	Perform operations on complex numbers.
8.	Determine the sum, difference, product and quotient of functions and determine their domains.
9.	Determine the composition of elementary functions.
10.	Use proper mathematical notation to evaluate functions and obtain their inverses.
11.	State and apply the fundamental properties of exponents and logarithms.
12.	Demonstrate knowledge of standard vocabulary associated with graphing, including but not limited to slopes of lines, intercepts, vertices of parabolas, asymptotes, and interplay between graph and functional notation.
13.	Determine, given its graph, whether a relation is a function and whether it is one-to-one, and determine its intercepts and domain and range.
14.	Graph and determine the domain and range of linear, quadratic, simple cubic, radical, reciprocal, absolute value, exponential and logarithmic functions.
15.	Graph circles and parabolas using horizontal and vertical translation.
16.	Set up and solve practical applications of the algebraic material.
17.	Determine the distance between two given points in the Cartesian plane, and find the midpoint of the line segment joining them.

		ENTRANCE SKILLS FOR (Math 4)																
EXIT SKILLS FOR (Math 20)		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
	1	X																
	2		X															
	3			X														
	4				X													
	5					X												
	6						X											
	7							X										
	8								X									
	9									X								
	10										X							
	11											X						
	12												X					
	13													X				
	14														X			
	15															X		
	16																X	
	17																	X

Santa Monica College
New SMC Course
Expanded Course Outline for PSYCH 8s - Community Psychology

Course Cover	
Discipline	PSYCH-PSYCHOLOGY
Course Number	8s
Full Course Title	Community Psychology
Catalog Course Description	This course provides an overview of prevention science and an introduction to the history, goals, and methods of community psychology. Community psychology focuses on the application of psychological principles to understand and address community issues. This course emphasizes the preventive and strength-based approach within community psychology to understand the ecological context of human experiences, initiate action research, and implement social change. Topics such as family and community violence, oppression, criminal justice, and mental health policy are explored. This course requires students to engage in learning outside the classroom in conjunction with various community-based organizations.
Rationale	Community psychologists work with groups and communities to promote the health and well-being of communities, build resilience and foster empowerment of a community as a whole. They focus on issues of social concern and use research and evaluation tools to advocate for social justice and redress social inequities. Community psychologists work with community members and stakeholders such as: non-profit organizations, social service providers, school administration and staff, health services professionals, law enforcement personnel, and private employers. Community psychologists may also work within the community mental health system to prevent and provide effective treatment of chronic mental health conditions including drug and alcohol addiction. Ultimately, community psychologists utilize multiple strategies to engender optimal community functioning. Currently, the SMC Department of Psychology does not offer a Community Psychology course. Community psychology is an emerging area of psychology ripe with opportunity. There are an increased number of community psychology and interdisciplinary degrees being offered at the undergraduate and graduate levels. A community psychology course would provide the theoretical and scientific foundation for not only students interested in pursuing further studies in community psychology, but also in areas such as public health and social work. As previously stated, community psychology has as part of its core values and praxis, community engagement and advocacy for social change. This class may also be of particular interest and benefit to students interested in community activism and organization. In addition to the academic benefits, training in community psychology has employment benefits. Recent workforce data indicate that

	between 2014 and 2024, employment opportunities in psychology are expected to rise by 19% (BLS, 2016). The American Psychological Association (APA) has identified a few areas of increased employment opportunities relevant to community psychology. Specifically, the APA (2008) notes that there is an increased need in the areas of program evaluation and multidisciplinary collaborations. In addition, there remains continued demand for professionals across degree levels in community mental health, substance abuse, and consulting. As these are areas of community psychology in which students receive specialized training, they will be uniquely qualified to take advantage of these emerging opportunities.
Proposal Information	
Proposed Start	Year: 2017 Semester: Fall
Proposed for Distance Ed	No
Proposed for Global Citizenship	Yes
Course Unit/Hours	
Variable Hour Exist	NO
Credit Hours	Min: 3.00
Weekly Lecture Hours	Min: 3.00 (Sem: 54)
Total Semester Instructional Hours	54.00
Repeatability	May be repeated 0 time(s)
Grading Methods	Letter Grade or P/NP
Transfer/General Ed	
Transferability	
Transfers to UC (pending review) Transfers to CSU	
IGETC Area:	
(pending review) • IGETC Area 4: Social and Behavioral Sciences ○ 4G: Interdisciplinary, Social & Behavioral Sciences	
CSU GE Area:	

(pending review)
• CSU GE Area D: Social, Political, and Economic Institutions and Behavior, Historical
  ○ D9 - Psychology
• CSU GE Area E: Lifelong Understanding and Self-Development
  ○ E - Lifelong Understanding and Self-Development	

SMC GE Area:	
• GENERAL EDUCATION PATTERN (SMC GE) ○ Area II-B: Social Science (Group B)	

Comparable Transfer Courses:

Program Applicability	
Designation	Credit - Degree Applicable
Proposed For	

Pre/Corequisites & Advisories

Skills Advisory
PSYCH 1
and

Skills Advisory
Eligibility for English 1

Course Objectives
Upon satisfactory completion of the course, students will be able to:
1. Demonstrate knowledge of the theory, historical foundations, and methods of community psychology.
2. Differentiate Community Psychology from other sub-disciplines of psychology.
3. Demonstrate familiarity with the empirical basis for prevention science, health promotion, and community psychology in preventing and responding to community issues
4. Demonstrate understanding of the factors shaping contexts that promote health and psychological well-being of individuals and communities.
5. Demonstrate critical thinking through collaboration with community partners in identifying, designing, implementing, and interpreting community based research.
6. Students will determine how psychologists can use psychological science and principles for the betterment of a community.

Course Content	
5%	Introduction to course. Community Psychology Defined
20%	Philosophical Tenets of Community Psychology: Prevention, Empowerment, Ecological Perspective
10%	Community Based Research, Participatory Action Research, and Community Scholarship
10%	Diversity and Social Justice
10%	Stress and Coping: Interventions and Action Strategies
10%	International Community Psychology and Liberation Psychology
35%	Applying Community Psychology: Criminal Justice, Education, Domestic and International Racialized Violence, & Exemplar Programs
Total: 100%	

Methods of Presentation	
Methods	Field Experience Group Work Lecture and Discussion Observation and Demonstration Online instructor-provided resources

	Projects Service Learning
Methods of Evaluation	
Methods	• 10% - Class Participation The learning community is comprised of each individual member whose presence and participation are essential. Students are expected to read all assigned materials, come to class prepared to discuss the readings, and to participate in class exercises and assignments. • 20% - Final exam Students will be provided with a case scenario in which they will apply information learned and skills gained during their community engagement experience. Students will design a community based intervention that would effectively address an issue in the local community (as presented in the provided case scenario). Students must clearly define the need, the population to be served, the intervention design, and the goals and desired outcomes as well as necessary resources. Students should use community psychology and prevention science research as an empirical basis for the recommended interventions. The purpose of this assignment is to integrate and apply the theory, research, and methods learned throughout the semester in addition to information and skills learned in the field to a real community issue. • 15% - Oral Presentation Oral presentations are components of the service learning and Photovoice assignments. • 25% - Papers Multiple reflection essays throughout the semester. • 20% - Projects The service learning component of the course is comprised of two components: 20% of the grade is associated with completion of a field-based service learning project. Projects will be developed with community partners to meet an identified community need. 10% of this assignment is associated with a class presentation summarizing the service work and project. • 10% - Research Projects PhotoVoice research project. Note that an additional 5% of this assignment is for the oral presentation component of the assignment. • 100% - Total
Additional Assessment Information (Optional)	See sample syllabus for assignment details.

Appropriate Textbooks	
Textbooks such as the following are appropriate:	
Formatting Style	APA
Textbooks	
1. Kloos, B., Hill, J., Thomas, E., Wandersman, A., Elias, M., & Dalton, J.. *Community psychology: Linking individuals and communities*, 3rd edition ed. Belmont, CA: Cengage, 2012, ISBN: 1111352577.	
2. Scott, V.C., & Wolfe, S.M.. *Community psychology: Foundations for Practice*, 15 ed. Thousand Oaks, CA: Sage Publications, 2015, ISBN: 978-1452278681.	

Assignments
Sample Assignment

Community Engagement – Service Learning

Students will be required to complete a minimum of 20 hours of service with a community-based organization. The Service-Learning Coordinator will be working with students to identify an appropriate service learning opportunity based on student interest and experience. Note that students are highly encouraged to work with a community based organization within their own communities and/or within a community of interest. Students will develop a community-based project in collaboration with the designated community partner. We will collaborate with community stakeholders on one or more aspects of the project to define the goals, methods, data gathering, analyses, and interpretation, and to disseminate our findings to relevant audiences, including the community partner. A portion of our class time will be devoted to various phases of this work, but much will take place out of class time (approximately 2-3 hours a week of field work, once the project has begun). Students will present a summary of the project and an overview of their experience in a class presentation.

This project will serve as a field site in which to cultivate as well as apply skills and knowledge that we are working to develop within the course. Students will complete a minimum of 20 hours of service with the community organization. Through the community engagement experience, students will:

• Deepen their understanding of a social problem through contact with both people it affects and people working to develop solutions to community problems;

• Provide value and service to the community organization;

• Connect and apply community psychology concepts to concrete experiences.

Note that this assignment is worth a large percentage of the overall course grade as students spend a significant amount of time outside of class at community sites. The assignment is comprised of two components: 20% of the grade is associated with completion of a field-based service learning project. Projects will be developed with community partners to meet an identified community need. 10% of this assignment is associated with a class presentation summarizing the service work and project.

Note: As this is a designated service-learning course, students will sign an agreement to

fulfill their service commitment. Consistent and reliable engagement in the field experience is an essential aspect of the course and a matter of professionalism. Students who do not fulfill the minimum service commitment will not receive credit for assignment.

Service-Learning Alternative: Community Based Research

Note that in extenuating circumstances, some students may not be able to participate in the service-learning requirement. Alternatively, students may develop and conduct community-based research within the SMC campus community with instructor approval. Students should note that this research will also take a comparable amount of time to complete. For this assignment, students will be required to assess four primary community psychology principles within the college community. Specifically, students will use multiple research methods learned in class including surveys, focus groups, individual interviews, and archival research. Students will study: 1) the ecology of the campus; 2) diversity; 3) sense of community 4) and power and social justice within the SMC college community. Students will use the results of each component of the research to compile an overall assessment of the SMC college community. Students will present the research findings to relevant stakeholders. As noted above, this assignment is worth a large percentage of the overall course grade as students spend a significant amount of time outside of class conducting research. The larger assignment is divided into smaller components to provide multiple opportunities for evaluation and to assess student learning.

Reflective Double-entry Journals

Students will write one-page entries each week in their online journal on the course page. Students will describe their personal thoughts and reactions to the service experience on the left page of the journal, and write about key issues from class discussions or readings on the right page of the journal. Students then draw arrows indicating relationships between their personal experiences and course content.

PhotoVoice Project

Students will have the opportunity to employ the Community Psychology method of participatory action research and apply to their own community using PhotoVoice (PV). PV is a research method and pedagogical tool that uses photography, imagery, and narrative to promote deep, critical understanding of lived experiences and community contexts. Students will be provided training in the PV method, including ethics. Students will use PV to document and respond to the following essential Community Psychology questions: (a) What defines your experience of community? (b) What needs to change in your community? ‘‘Reflect on your community. What do you think needs to change? What could be changed to make your life or the lives of others better?’’ In response to each question, students will present their images to class and select a photonarrative to discuss in greater depth.

Community Based Intervention Assignment- Final

This is a final take-home assignment in which students will be provided a case scenario in which they will apply information learned and skills gained during their community

engagement experience. Students will design a community based intervention that would effectively address an issue in the local community (as presented in the provided case scenario). Students must clearly define the need, the population to be served, the intervention design, and the goals and desired outcomes as well as necessary resources. Students should use community psychology and prevention science research as an empirical basis for the recommended interventions. The purpose of this assignment is to integrate and apply the theory, research, and methods learned throughout the semester in addition to information and skills learned in the field to a real community issue.
Student Learning Outcomes
1. Students will demonstrate an ecological understanding of human behavior and psychological health.
2. Students will demonstrate an understanding of basic scientific methods used in community based psychological research.
Minimum Qualification

Minimum Qualifications:	Psychology (Masters Required)

Library	
List of suggested materials has been given to librarian?	Yes
Library has adequate materials to support course?	No
Additional Comments/Information	
Note that the library currently has a number of useful resources related to prevention science and community psychology such as the Journal of Community Psychology; Community, Work, & Family; and the Journal of Social Issues. The attached list provides additional resources that have been identified in the field as being seminal books and critical journals publishing a range of diverse discipline related research.	

Global Citizenship Application	
Global Citizenship Category	Service Learning
Global Citizenship Sub-Categories	The required hours of service must be at least 20 per semester. The academic rigor of the course must be supported by the use of service learning. Structured written and/or oral reflection activities must be ongoing, involve instructor feedback to students, and be structured in such a way to help achieve the course and/or assignment objectives. The service-learning component of the course must be integrated into the grading criteria for the course such that it contributes to at least 40% of the grade. (Please note: the hours completed are NOT part of the grade, the academic work resulting from the service learning hours contribute to at least 40% of the grade.)
Citizenship Rationale	Community engagement pedagogies connect classroom learning with community engagement. Through service learning experiences, students connect and apply material learned in the classroom to community based experiences. In so doing, students are able to provide meaningful and necessary services for community partners. For social science courses such as Community Psychology, this provides a discipline-specific way to apply what is learned in the classroom while psychology majors have the added advantage of gaining valuable experience.

	The benefits of service-learning are multiple including but not limited to: engaging students in active, experiential learning; fostering knowledge construction; and engendering critical thinking about the complexities of social problems (Howard, 2001). To this end, research on the use of service-learning in the community college has shown greater achievement of learning outcomes, critical thinking, and an enhanced sense of personal and civic responsibility (Prentice & Robinson, 2010). In addition, meta-analyses have revealed additional improvements in student attitudes toward self and school as well as the cultivation of social skills as a result of service learning participation (Celio, Durlak, & Dymnicki, 2011). Service-learning courses and other courses with community/field components have been associated with increased retention of students of color (Wood, Harris, & White, 2015). Thus, such a pedagogical method also supports SMC equity efforts. Lastly, service-learning is mission-centric and particularly, advances the citizenship requirement. Moreover, it strengthens ties between the College and local community.

ADVISORY Checklist and Worksheet

Psych 8s
Proposed Advisory: Psych 1 (as well as “Eligibility for English 1”)

SECTION 1 - CONTENT REVIEW:

Criterion	N/A	Yes	No
1. Faculty with appropriate expertise have been involved in the determination of the advisory.		**X**	
2. The department in which the course is (will be) taught has considered course objectives in accordance with accreditation standards.		**X**	
3. Selection of this advisory is based on tests, the type and number of examinations, and grading criteria.		**X**	
4. Selection of this advisory is based on a detailed course syllabus and outline of record, related instructional materials and course format.		**X**	
5. The body of knowledge and/or skills which are recommended for success before enrollment have been specified in writing (see below).		**X**	
6. The course materials presented in this advisory have been reviewed and determined to teach knowledge or skills recommended for success in the course requiring this advisory.		**X**	
7. The body of knowledge and/or skills recommended for success in this course have been matched with the knowledge and skills developed by the advisory course.		**X**	
8. The body of knowledge and/or skills taught in the advisor are not an instructional unit of this course.		**X**	
9. Written documentation that steps 1 to 8 above have been taken is readily available in departmental files.		**X**	

Advisory Worksheet

ENTRANCE SKILLS RECOMMENDED FOR SUCCESS IN: Psych 8s

(It is recommended that the student to be able to do or understand the following BEFORE entering the course)

A)	Have an introduction level understanding of the philosophical perspectives and science of psychology.
B)	Have an introduction level understanding of the domains of social processes and individual differences.
C)	Have an introduction level understanding of how basic psychological principles can be applied to higher level psychology domains and to non-psychology domains.
D)	Demonstrate and be able to use critical thinking skills in evaluating and understanding psychological processes and theories.
E)	Demonstrate the many ways psychology can and is applied to current social issues and problems on a national and global basis.

EXIT SKILLS (objectives) FROM Psych 1

(What the student has the demonstrated ability to do or understand AFTER successful completion of this course)

1.	Identify and explain major theoretical/philosophical perspectives in psychology and it's sub-disciplines, (e.g., behavioral, biological, cognitive, evolutionary, humanistic, socio-cultural).
2.	Demonstrate knowledge and understanding of the following general domains: (1) biological bases of behavior and mental processes, (2) sensation and perception, (3) learning and memory (4) cognition, consciousness, (5) individual differences, psychometrics, personality, (6) social processes (including those related to socio-cultural and international dimensions), (7) developmental changes in behavior and mental processes that occur across the lifespan, (8) psychological disorders, and (9) emotion and motivation;
3.	Describe and demonstrate an understanding of applied areas of psychology (e.g., clinical, counseling, forensic, community, organizational, school, health)
4.	Demonstrate the many ways psychology can and is applied to current social issues and problems on a national and global basis
5.	Understand and apply psychological principles to personal experience and social and organizational settings.
6.	Demonstrate critical thinking skills and information competence as applied to psychological topics.

	ENTRANCE SKILLS FOR Psych 8s								
EXIT SKILLS FOR Psych 1		A	B	C	D	E	F	G	H
	1	x							
	2		x						
	3			x					
	4			x		x			
	5			x					
	6				x				
	7								
	8								

Santa Monica College
New SMC Course
Expanded Course Outline for MATH 3 - Trigonometry with Applications

Course Cover	
Discipline	MATH-MATHEMATICS
Course Number	3
Full Course Title	Trigonometry with Applications
Catalog Course Description	The course includes a study of the properties and graphs of trigonometric and inverse trigonometric functions, trigonometric identities, solutions of triangles, trigonometric equations, parametric equations, polar coordinates and polar equations, the algebra of vectors in two and three dimensions and topics from analytic geometry and applications.
Rationale	College Algebra and Trigonometry together will serve as an alternative to pre-Calculus (Math 2) to fulfill the prerequisite requirement for Calculus 1. Math 2, a combination of college algebra and trigonometry, has a low success rate. Students could potentially master one of the two subject areas, but fail the course and have no option other than repeating the whole course again. Students, who transfer to SMC from other colleges and are placed in Math 2, may lack knowledge in only one of the two subject areas. College Algebra and Trigonometry courses have been created to increase the number of students who can qualify for Calculus 1 and also help students who lack knowledge in one of the two subject areas.
Proposal Information	
Proposed Start	Year: 2017 Semester: Spring
Proposed for Distance Ed	No
Proposed for Global Citizenship	No
Course Unit/Hours	
Variable Hour Exist	NO
Credit Hours	Min: 3.00
Weekly Lecture Hours	Min: 3.00 (Sem: 54)
Total Semester Instructional Hours	54.00
Load Factor	1.00
Repeatability	May be repeated 0 time(s)
Grading Methods	Letter Grade or P/NP
Transfer/General Ed	
Transferability	
Transfers to CSU	
IGETC Area:	
Does NOT satisfy any area of IGETC:	
CSU GE Area:	

(pending review)

- CSU GE Area B: Scientific Inquiry and Quantitative Reasoning (mark all that apply)
  - B4 - Mathematics/Quantitative Thinking

SMC GE Area:

- GENERAL EDUCATION PATTERN (SMC GE)
  - Area IV-B: Language and Rationality (Group B)

Program Applicability

Designation	Credit - Degree Applicable

Pre/Corequisites & Advisories

Prerequisite
MATH 20

Prerequisite
MATH 32

Skills Advisory
MATH 4

Skills Advisory
Eligibility for English 1

Course Objectives

Upon satisfactory completion of the course, students will be able to:
1. Recognize and use the vocabulary of angles.
2. Use right triangles (including special triangles) to evaluate the six trigonometric functions of a given acute angle.
3. Use the unit circle to define the six trigonometric functions of any given real number.
4. Evaluate the six trigonometric functions of integral multiples of "pi"/6 and "pi"/4.
5. Recognize and draw the graphs of the six trigonometric functions and their transformations.
6. Find the inverse of a given trigonometric function.
7. Use trigonometric identities to simplify trigonometric expressions and solve trigonometric equations.
8. Find the solutions (if any) of a given trigonometric equation.
9. Use properties of the trigonometric and inverse trigonometric functions, including the law of sines and the law of cosines, in applications.
10. Graph a curve given in polar coordinates in the polar coordinate system.
11. Solve equations in polar coordinates.
12. Convert an equation given in polar coordinates to an equation in rectangular coordinates and vice versa.

13. Use polar coordinates to perform algebraic operations involving complex numbers.	
14. Draw the graph of a curve given in parametric equations and indicate its orientation.	
15. Find the equation in rectangular coordinates of a given plane curve defined by two parametric equations.	
16. Find parametric equations for a plane curve given in rectangular coordinates.	
17. Perform operations involving vectors and their applications.	
Course Content	
22%	Trigonometric functions: unit circle approach
22%	Trigonometric functions: right triangle approach
31%	Analytic trigonometry
15%	Polar coordinates and parametric equations
10%	Vectors
Total: 100%	
Methods of Presentation	
Methods	Lecture and Discussion
Other Methods	Collaborative activities
Methods of Evaluation	
Methods	• 60% - Exams/Tests 3 to 5 Exams • 30% - Final exam • 10% - Homework Homework, quizzes, collaborative activities • 100% - Total
Additional Assessment Information (Optional)	Closed-book, closed-notes exams will be given to determine the student's mastery of the material. A comprehensive closed-book, closed-notes final exam will be given to assess student learning outcomes and knowledge of course objectives. Graphing calculators are not permitted during exams. At the instructor's discretion, scientific calculators may be used during exams as long as it is not a substitute for obtaining exact answers by mathematical procedures. It is highly recommended that homework be collected. At the discretion of the instructor, homework, quizzes, collaborative learning activities, class participation, or projects may be part of the evaluation process.
Appropriate Textbooks	
Textbooks such as the following are appropriate:	
Formatting Style	APA
Textbooks	
1. Sullivan. *Trigonometry, A Unit Circle Approach*, 10th ed. Pearson, 2016	
Assignments	
1. Sketch the graph of one complete cycle of the function $f(x) = -3\sin(\frac{1}{2}x + \pi)$	

2. Solve the trigonometric equation in the given interval

$$3\sec^2 x + 4\cos^2 x = 7, [0, 2\pi)$$

3. Given vectors $\vec{u} =< -1, 2 >$ *and* $\vec{v} =< 3, -4 >$, find the angle θ between $\vec{u}$ and $\vec{v}$.

Student Learning Outcomes
1. Given a trigonometric function, find its domain, range, period, amplitude (if it exists), phase shift and sketch its graph.
2. Solve trigonometric equations using trigonometric identities and/or other algebraic techniques.
3. Given two vectors in two or three dimensions, use the dot product or cross product to determine if the vectors are orthogonal, parallel or neither.

Minimum Qualification	
Minimum Qualifications:	Mathematics (Masters Required)

Library	
List of suggested materials has been given to librarian?	No
Library has adequate materials to support course?	Yes

Prerequisite / Corequisite Checklist and Worksheet

Math 3 (Trigonometry with Applications)
Prerequisite: Math 20 (Intermediate Algebra) and Math 32 (Plane Geometry)
Advisory: Math 4 (College Algebra for STEM Majors), skills advisory eligibility for English 1

SECTION 1 - CONTENT REVIEW: If any criterion is not met, the prerequisite will be disallowed.

Criterion	Met	Not Met
1. Faculty with appropriate expertise have been involved in the determination of the prerequisite, corequisite or advisory.	X	
2. The department in which the course is (will be) taught has considered course objectives in accordance with accreditation standards.	X	
3. Selection of this prerequisite, corequisite or advisory is based on tests, the type and number of examinations, and grading criteria.	X	
4. Selection of this prerequisite, corequisite or advisory is based on a detailed course syllabus and outline of record, related instructional materials and course format.	X	
5. The body of knowledge and/or skills which are necessary for success before and/or concurrent with enrollment have been specified in writing.	X	
6. The course materials presented in this prerequisite or corequisite have been reviewed and determined to teach knowledge or skills needed for success in the course requiring this prerequisite.	X	
7. The body of knowledge and/or skills necessary for success in the course have been matched with the knowledge and skills developed by the prerequisite, corequisite or advisory.	X	
8. The body of knowledge and/or skills taught in the prerequisite are not an instructional unit of the course requiring the prerequisite.	X	
9. Written documentation that steps 1 to 8 above have been taken is readily available in departmental files.	X	

SECTION II - ADDITIONAL LEVEL OF SCRUTINY:

In addition to the affirmation of content review listed in section I, an additional level of scrutiny is also required. The level of scrutiny depends on which type of prerequisite is involved. There are six types and each is listed below. Please identify which one is being used to justify the proposed prerequisite. The additional level of scrutiny corresponding to each type of prerequisite is identified below.

X Type 2: Sequential within and across disciplines (e.g., Physics 7, 8, 9, …)
Complete the Prerequisite Worksheet

Prerequisite Worksheet

ENTRANCE SKILLS FOR Math 3:

A)	Simplify advanced numerical and algebraic expressions involving multiple operations.
B)	Solve linear, quadratic, rational and absolute value inequalities, graph their solution sets, and express the answers in interval notation.
C)	Solve literal equations for a designated variable.
D)	Perform operations on complex numbers.
E)	Determine the sum, difference, product and quotient of functions and determine their domains.
F)	Use proper mathematical notation to evaluate functions and obtain their inverses.
G)	Demonstrate knowledge of standard vocabulary associated with graphing.
H)	Determine, given its graph, whether a relation is a function and whether it is one-to-one, and determine its intercepts and domain and range.
I)	Graph and determine the domain and range of linear, quadratic, simple cubic, radical, reciprocal, absolute value, exponential and logarithmic functions.
J)	Graph circles and parabolas using horizontal and vertical translation.
K)	Recognize a statement and determine its negation.
L)	Given a conditional statement expressed implicitly, rewrite the statement in the standard "If – then" form.
M)	Given a conditional statement, identify the hypothesis, the conclusion, its converse, inverse, and contrapositive and know which are logically equivalent.
N)	Use elementary logical reasoning to determine if a given argument is valid.
O)	Use counterexamples to disprove a false statement or conjecture.
P)	Use deductive arguments to write direct and/or indirect proofs.
Q)	Demonstrate understanding of basic geometric terms, including but not limited to radius, triangle, and tangent.

EXIT SKILLS (objectives) FOR Math 20:

1.	Simplify advanced numerical and algebraic expressions involving multiple operations.
2.	Solve linear, quadratic, rational and absolute value inequalities, graph their solution sets, and express the answer in interval notation.
3.	Solve literal equations for a designated variable.
4.	Solve linear, quadratic form, simple cubic, radical, rational, absolute value, elementary exponential, and elementary logarithmic equations.
5.	Apply algorithms of completing the square, rationalizing the denominator, and long division and synthetic division of polynomials.
6.	Graph the solution sets of systems of linear inequalities.
7.	Perform operations on complex numbers.
8.	Determine the sum, difference, product and quotient of functions and determine their domains.
9.	Determine the composition of elementary functions.
10.	Use proper mathematical notation to evaluate functions and obtain their inverses.
11.	State and apply the fundamental properties of exponents and logarithms.
12.	Demonstrate knowledge of standard vocabulary associated with graphing, including but not limited to slopes of lines, intercepts, vertices of parabolas, asymptotes, and interplay between graph and functional notation.
13.	Determine, given its graph, whether a relation is a function and whether it is one-to-one, and determine its intercepts and domain and range.
14.	Graph and determine the domain and range of linear, quadratic, simple cubic, radical, reciprocal, absolute value, exponential and logarithmic functions.
15.	Graph circles and parabolas using horizontal and vertical translation.
16.	Set up and solve practical applications of the algebraic material.
17.	Determine the distance between two given points in the Cartesian plane, and find the midpoint of the line segment joining them.

	ENTRANCE SKILLS FOR (Math 3)																		
EXIT SKILLS FOR (Math 20)		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
	1	X																
	2		X															
	3			X														
	4																	
	5																	
	6							X										
	7				X													
	8					X												
	9																	
	10						X											
	11																	
	12							X										
	13								X					X				
	14							X		X								
	15							X			X							
	16											X	X		X	X	X	X
	17																	

Prerequisite / Corequisite Checklist and Worksheet

Math 3 (Trigonometry with Applications)
Prerequisite: Math 32 (Plane Geometry) and Math 20 (Intermediate Algebra)
Advisory: Math 4 (College Algebra for Stem Majors), skills advisory: eligibility for English 1

SECTION 1 - CONTENT REVIEW: If any criterion is not met, the prerequisite will be disallowed.

Criterion	Met	Not Met
1. Faculty with appropriate expertise have been involved in the determination of the prerequisite, corequisite or advisory.	X	
2. The department in which the course is (will be) taught has considered course objectives in accordance with accreditation standards.	X	
3. Selection of this prerequisite, corequisite or advisory is based on tests, the type and number of examinations, and grading criteria.	X	
4. Selection of this prerequisite, corequisite or advisory is based on a detailed course syllabus and outline of record, related instructional materials and course format.	X	
5. The body of knowledge and/or skills which are necessary for success before and/or concurrent with enrollment have been specified in writing.	X	
6. The course materials presented in this prerequisite or corequisite have been reviewed and determined to teach knowledge or skills needed for success in the course requiring this prerequisite.	X	
7. The body of knowledge and/or skills necessary for success in the course have been matched with the knowledge and skills developed by the prerequisite, corequisite or advisory.	X	
8. The body of knowledge and/or skills taught in the prerequisite are not an instructional unit of the course requiring the prerequisite.	X	
9. Written documentation that steps 1 to 8 above have been taken is readily available in departmental files.	X	

SECTION II - ADDITIONAL LEVEL OF SCRUTINY:

In addition to the affirmation of content review listed in section I, an additional level of scrutiny is also required. The level of scrutiny depends on which type of prerequisite is involved. There are six types and each is listed below. Please identify which one is being used to justify the proposed prerequisite. The additional level of scrutiny corresponding to each type of prerequisite is identified below.

X Type 2: Sequential within and across disciplines (e.g., Physics 7, 8, 9, …)
Complete the Prerequisite Worksheet

Prerequisite Worksheet

ENTRANCE SKILLS FOR Math 3:

A)	Simplify advanced numerical and algebraic expressions involving multiple operations.
B)	Solve linear, quadratic, rational and absolute value inequalities, graph their solution sets, and express the answers in interval notation.
C)	Solve literal equations for a designated variable.
D)	Perform operations on complex numbers.
E)	Determine the sum, difference, product and quotient of functions and determine their domains.
F)	Use proper mathematical notation to evaluate functions and obtain their inverses.
G)	Demonstrate knowledge of standard vocabulary associated with graphing.
H)	Determine, given its graph, whether a relation is a function and whether it is one-to-one, and determine its intercepts and domain and range.
I)	Graph and determine the domain and range of linear, quadratic, simple cubic, radical, reciprocal, absolute value, exponential and logarithmic functions.
J)	Graph circles and parabolas using horizontal and vertical translation.
K)	Recognize a statement and determine its negation.
L)	Given a conditional statement expressed implicitly, rewrite the statement in the standard "If – then" form.
M)	Given a conditional statement, identify the hypothesis, the conclusion, its converse, inverse, and contrapositive and know which are logically equivalent.
N)	Use elementary logical reasoning to determine if a given argument is valid.
O)	Use counterexamples to disprove a false statement or conjecture.
P)	Use deductive arguments to write direct and/or indirect proofs.
Q)	Demonstrate understanding of basic geometric terms, including but not limited to radius, triangle, and tangent.

EXIT SKILLS (objectives) FOR Math 32:

1.	Recognize a statement and determine its negation
2.	Determine the truth value for compound statements.
3.	Given a conditional statement expressed implicitly, rewrite the statement in the standard "If – then" form.
4.	Given a conditional statement, identify the hypothesis, the conclusion, its converse, inverse, and contrapositive and know which are logically equivalent.
5.	Use elementary logical reasoning to determine if a given argument is valid.
6.	Use counterexamples to disprove a fallacy.
7.	Use deductive arguments to write direct and/or indirect proofs.
8.	Construct geometric figures using a straightedge and compass.
9.	Use the properties of basic geometric figures, definitions, related postulates and theorems, including congruency, similarity and right-triangle trigonometry, to solve applications including but not limited to those involving bearing and angle of elevation/depression.
10.	From memory, state and use formulas to calculate the perimeter and area of polygons and circles, and the volume and surface area of rectangular boxes and right circular cylinders.
11.	Demonstrate understanding of basic geometric terms, including but not limited to radius, triangle, and tangent.

	ENTRANCE SKILLS FOR (Math 3)																	
EXIT SKILLS FOR (Math 32)		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
	1											X						
	2																	
	3												X					
	4													X				
	5														X			
	6															X		
	7																X	
	8																	
	9		X															
	10			X														
	11																	X

ADVISORY Checklist and Worksheet

Math 3 (Trigonometry with Applications)

Proposed Advisory: Math 4 (College Algebra for STEM Majors)

SECTION 1 - CONTENT REVIEW:

Criterion	N/A	Yes	No
1. Faculty with appropriate expertise have been involved in the determination of the advisory.		X	
2. The department in which the course is (will be) taught has considered course objectives in accordance with accreditation standards.		X	
3. Selection of this advisory is based on tests, the type and number of examinations, and grading criteria.		X	
4. Selection of this advisory is based on a detailed course syllabus and outline of record, related instructional materials and course format.		X	
5. The body of knowledge and/or skills which are recommended for success before enrollment have been specified in writing (see below).		X	
6. The course materials presented in this advisory have been reviewed and determined to teach knowledge or skills recommended for success in the course requiring this advisory.		X	
7. The body of knowledge and/or skills recommended for success in this course have been matched with the knowledge and skills developed by the advisory course.		X	
8. The body of knowledge and/or skills taught in the advisor are not an instructional unit of this course.		X	
9. Written documentation that steps 1 to 8 above have been taken is readily available in departmental files.		X	

Advisory Worksheet

ENTRANCE SKILLS RECOMMENDED FOR SUCCESS IN: [Math 3]
(It is recommended that the student to be able to do or understand the following BEFORE entering the course)

A)	Simplify advanced numerical and algebraic expressions involving multiple operations.
B)	Solve linear, quadratic, rational and absolute value inequalities, graph their solution sets, and express the answers in interval notation.
C)	Solve literal equations for a designated variable.
D)	Perform operations on complex numbers.
E)	Determine the sum, difference, product and quotient of functions and determine their domains.
F)	Use proper mathematical notation to evaluate functions and obtain their inverses.
G)	Demonstrate knowledge of standard vocabulary associated with graphing.
H)	Determine, given its graph, whether a relation is a function and whether it is one-to-one, and determine its intercepts and domain and range.
I)	Graph and determine the domain and range of linear, quadratic, simple cubic, radical, reciprocal, absolute value, exponential and logarithmic functions.
J)	Graph circles and parabolas using horizontal and vertical translation.
K)	Recognize a statement and determine its negation.
L)	Given a conditional statement expressed implicitly, rewrite the statement in the standard "If – then" form.
M)	Given a conditional statement, identify the hypothesis, the conclusion, its converse, inverse, and contrapositive and know which are logically equivalent.
N)	Use elementary logical reasoning to determine if a given argument is valid.
O)	Use counterexamples to disprove a false statement or conjecture.
P)	Use deductive arguments to write direct and/or indirect proofs.
Q)	Demonstrate understanding of basic geometric terms, including but not limited to radius, triangle, and tangent.

EXIT SKILLS (objectives) FROM [Math 4]

(What the student has the demonstrated ability to do or understand AFTER successful completion of this course)

1. Determine whether a relation represents a function. If it is a function, determine its domain and range, determine whether it is odd, even or neither based on its formula or its graph; and determine whether it is one-to-one, and if it is, determine its inverse function.
2. Analyze and graph a given function, including but not limited to piecewise-defined, polynomial, rational, exponential, and logarithmic functions, without the aid of graphing devices. Determine intercepts, coordinates of holes, and equations of asymptotes. Determine intervals on which polynomial and rational functions are positive and negative.
3. Use transformation techniques including vertical and horizontal shifts, compression, stretching, and reflection over the x or y axis to sketch the graph of a relation.
4. Use the language and standard mathematical notation of algebra of functions.
5. Determine algebraic combinations and compositions of functions and state their domains. Write a given function as a composition of two non-identity functions.
6. Use techniques including synthetic division and long division, and results including the Fundamental Theorem of Algebra, the Intermediate Value Theorem, and the Rational Zeros Theorem to find all complex zeros of a polynomial function of degree greater than two, and write the function in completely factored form.
7. Apply functions and algebraic techniques to model real world STEM applications.
8. Solve polynomial, rational, exponential, and logarithmic equations.
9. Express a quadratic equation in variables x and y, with no xy term, in standard form in order to classify its graph. Analyze conics algebraically and graphically by identifying important characteristics.
10. Find terms of explicitly and recursively defined sequences including but not limited to arithmetic and geometric.
11. Evaluate, manipulate and interpret summation notation.
12. Prove statements using mathematical induction.
13. Apply the binomial theorem to expand whole number powers of a binomial and find a required term.
14. Synthesize multiple skills and techniques in order to solve complex, multi-step problems.
15. Solve systems of linear equations in at least three variables using matrix row reduction.
16. Solve inequalities including but not limited to absolute value, polynomial, and rational. Express the solution of an inequality using interval notation, set builder notation and graphing on a number line.
17. Solve nonlinear systems of equations and inequalities.
18. Solve application problems involving exponential and logarithmic functions or equations.

	RECOMMENDED ENTRANCE SKILLS FOR (Math 3)																	
EXIT SKILLS FOR (Math 4)		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
	1						X		X									
	2							X	X		X							
	3									X								
	4					X	X											
	5					X												
	6																	
	7																	
	8		X															
	9																	
	10																	
	11																	
	12												X					
	13																	
	14																	
	15																	
	16		X															
	17																	
	18																	

Santa Monica College
DE for EXISTING courses
Expanded Course Outline for ASTRON 6 - Archaeoastronomy

Course Cover	
Discipline	ASTRON-ASTRONOMY
Course Number	6
Full Course Title	Archaeoastronomy
Catalog Course Description	This course will stress naked-eye astronomy and the historical development of astronomical thought, from the stone age to modern times. Students will learn about celestial motions and how these motions have shaped various cultural views, and how cultural beliefs and values shaped interpretations of the phenomena seen. We will see how eclipses of the sun and moon helped mark important epochs of time, and how solar and lunar motions were used to help create calendars. The class will study the development of astronomy in western European cultures, American cultures (North America, Mesoamerica, and South America), and non-western cultures (Asia, Africa).
Rationale	To create a DE Astronomy 6 class. Our Astro 1 and 2 online classes have been very popular and we have had numerous requests from students for additional online astronomy courses. Astronomy 6 is the natural choice for our next online offering. It would meet the Global Citizenship requirement.
Proposal Information	
Proposed Start	Year: 2018 Semester: Spring
Proposed for Distance Ed	Yes
Proposed for Global Citizenship	No
Course Unit/Hours	
Variable Hour Exist	NO
Credit Hours	Min: 3.00
Weekly Lecture Hours	Min: 3.00 (Sem: 54)
Total Semester Instructional Hours	54.00
Repeatability	May be repeated 0 time(s)
Grading Methods	Letter Grade or P/NP
Transfer/General Ed	
Transferability	
Transfers to UC Transfers to CSU	
IGETC Area:	
• IGETC Area 4: Social and Behavioral Sciences ○ 4A: Anthropology and Archaeology	
CSU GE Area:	
• CSU GE Area D: Social, Political, and Economic Institutions and Behavior,	

Historical
- D1 - Anthropology and Archeology

SMC GE Area:

- GENERAL EDUCATION PATTERN (SMC GE)
  - Area II-B: Social Science (Group B)
  - Area V: Global Citizenship

Program Applicability	
Designation	Credit - Degree Applicable

Course Objectives
Upon satisfactory completion of the course, students will be able to:
1. Evaluate how various cultures explained celestial phenomena (rising and setting of the sun, moon, planets and stars, etc.).
2. Identify the phases of the moon and the stages of solar and lunar eclipses.
3. Define the basic principles of celestial navigation.
4. Describe how the tilt of the planet influences the seasons and rising position of the sun.
5. Define how ancient cultures visualized the celestial realm.
6. Describe how the observations of the skies affected the daily lives of ancient peoples.
7. Compare and contrast the celestial interpretations, knowledge, and cultural astronomical practices of different societies (ethnoastronomy).
8. Review the ways in which scientists have gathered physical evidence (scrolls, ancient tablets, pictographs, petroglyphs) or studied megalithic and ancient architectural structures to study the ancient astronomical belief systems.
9. Describe how the scientific method has been used in refuting or substantiating the ancient cosmologies.
10. Describe how astronomy of today evolved from all of the cultural astronomies of the past.
11. Describe how the material studied in this course has contemporary significance.

Course Content	
15%	Naked eye astronomy: The celestial sphere, motions of sun, moon and planets.
9%	Seasons, tilt of Earth, life-boat navigation.
9%	Celestial myths of different cultures.
9%	Astronomy in the Americas (North America, Mesoamerica, South America).
9%	African Astronomy.
9%	Mesopotamia Astronomy.
9%	Asian and Oceanian Astronomy (China, Polynesia, etc.).
9%	Western European Astronomy (Greek, Italian, etc.).
7%	Development of the scientific method.
5%	Calendars
10%	Discuss how this course material has contemporary significance.
Total: 100%	

Methods of Presentation

Opt Heading	
Methods	Lecture and Discussion Other Projects
Other Methods	Combination of lecture, discussion, and audio/video presentations, demonstrations, possibly supplemented with visits to the college planetarium.

Methods of Evaluation

Methods	• 25% - Exams/Tests Midterm Exam • 30% - Final exam Cumulative Final Exam • 23% - Group Projects As a group, creating and presenting a PowerPoint project. This will involve students using online "Discussions" to complete the project. • 22% - Homework Consisting on reports on reading assignments, and quizzes on audio/video assignments. • 100% - Total

Appropriate Textbooks

Textbooks such as the following are appropriate:

Formatting Style	APA

Textbooks

1. Magli, Giulio. *Archaeoastronomy: Introduction to the Science of Stars and Stones* , ed. Springer, 2016, ISBN: 978-3319228815.

2. Magli, Giulio. *Mysteries and Discoveries of Archaeoastronomy: From Giza to Easter Island*, ed. Copernicus, 2016, ISBN: 978-1493939077.

3. Lehrburger, Carl. *Secrets of Ancient America: Archaeoastronomy and the Legacy of the Phoenicians, Celts, and Other Forgotten Explorers*, ed. Bear & Company, 2015, ISBN: 978-1591431930.

4. Penprase, Bryan. *The Power of the Stars: How Celestial Observations Have Shaped Civilization*, ed. Springer, 2010, ISBN: 9781441968029.

5. IAU Symposium 278 . *Archaeoastronomy and Ethnoastronomy: Building Bridges Between Cultures*, ed. Cambridge University Press, 2011

6. Aveni, Anthony. *Stairways to the Stars: Skywatching in the Three Greast Ancient Cultures*, ed. John Wiley and Sons, Inc., 1997, ISBN: 0471329762.

Assignments

Sample Assignment

1.
Internet Research/Writing Assignment

INTERNET INVESTIGATION

I want you to research, on the internet, the Native American culture of the Ancient Pueblo Indians (used to be called the Anasazi). The Ancient Pueblo Indians were a

nomadic culture, located around 36 degree north latitude, which eventually became an agricultural culture).
Next, I want you to research the Aztec culture, a really advanced agricultural society at around zero degrees latitude that were probably descendents of the hunters and gatherers from northern Mexico.

A good starting point website for this assignment is the University of Chicago's Digital Library at:
http://ecuip.lib.uchicago.edu/diglib/science/cultural_astronomy/
Click on the link "Cultures", and then click on Anasazi or Aztec.

You are not limited to this website; in fact, use many.
Your goal will be to compare and contrast the celestial interpretations and astronomical practices of these two societies. This is so broad that I will help you focus on the topics I want in the "Written Report" section below.

WRITTEN REPORT:

This paper should be four to eight pages long. The header sheet and data sheet are not to be counted. The header sheet should have your name, course name, date, and a title. The written report will have 1-inch margins (all sides), 12 pt standard font (such as Calibri), and be double-spaced.

The written report is to compare and contrast the Ancient Pueblo Indians and Aztec cultures and it should address:

• How latitude can influence daylight hours.
• How the duration of daylight plays a role in the kinds of seasons that are experienced.
• How the observations of the Sun and Sirius could lead to a calendar.
• How a calendar could help a society become an agricultural society.
• Compare and contrast their calendars – in fact, stress this.
• Compare and contrast their urban organization.
• Compare and contrast their mythologies.

You will be graded on the thoroughness of your report. I want your report in your own words. If I discover (using Turnitin) that you have just cut and pasted from published articles or websites, you will be given a grade of F and reported to the campus disciplinarian for plagiarism.

2.
Film Review Assignment
The Navigators - Pathfinders of the Pacific

The Polynesians are well known for making long ocean voyages, over a thousand miles, without the use of Western navigational tools like the compass or sextant. The Polynesian navigators used the knowledge that had been passed down from navigator to apprentice over the centuries to sail between the small inhabited islands of the Pacific. This film explores this ancient navigational heritage and how this culture spread throughout the Pacific. Interviews are conducted with a Micronesian navigator named Mau Piailug from the island of Satawal, along with interviews of various

archaeologists. Historical accounts of past explorers (Captain James Cook and Thor Heyerdahl) are investigated to try and find out where the Polynesians originated. The movie then shows Mau Piailug and his crew sailing from Hawaii to Tahiti using the navigational methods of his ancestors.

Your assignment is to watch this film, and then type up answers to the bulleted questions, fill-ins, and comments below.

The header of your answer sheet should have your name, course name, date, and title of the film, in BOLD. Then retype the bulleted items below with your responses (1st one, then the answer, 2nd one, then the answer, etc.). I want your answer sheet to be "bulleted" format also. In the case of the fill-ins, retype the bulleted item below with the filled in words bolded and underlined within the bulleted item. In the case of those bulleted questions that require one or two sentences, or one or two paragraphs, retype the bulleted question, then a blank line, then your response. Use complete sentences or your grade will be reduced

I want you to use 1-inch margins, 12 pt standard font (such as Times New Roman), and have it be single-spaced.

• In the Micronesian culture, covered in this film, there were two kinds of navigators. A man who only knows how to sail is called _____. The man that knows how to sail and has learned the "magic" is called _____. A man that could not navigate was given _____ (more than one word needed here).
• In this culture, the woman's domain was the _____, and the man's domain was the _____.
• Explain how a navigator would sail if there were no stars visible (due to clouds obscuring the sky). In this explanation give the number of patterns mentioned in the movie.
• Three cultures of the Pacific are mentioned in the movie; what are they? Which culture do the people of Satawal belong to?
• Captain James Cook and Thor Heyerdahl had different viewpoints on the origins of the people of the Pacific. Please explain their viewpoints, and their arguments for holding that opinion.
• In the movie, archaeologists are interviewed. From their findings, whose opinion, Cook's or Heyerdahl's, is supported? What are the "cultural fingerprints" that solved this controversy?
• An ancient cave with petroglyphs is visited on the island of Kona. What do the petroglyphs depict?
• Toward the end of the movie, it shows that the Micronesian culture changed. It changed from a hunter-gatherer society (navigation emphasized because they were fishermen), to what type of society?
• It is stated that the Micronesian canoe houses served three purposes. What are they?
• Mau Piailug is shown explaining the "star compass." When he introduces it, he says "Learn the stars, then sail." Please explain it (in as few words as possible). Include in your explanation, how many clumps of coral are used, how many major stars are discussed, and what is it that the stones are representing?

Student Learning Outcomes

1. Compare and contrast the celestial interpretations, knowledge, and astronomical practices of different cultures.

2. Describe how modern scientists have gathered physical evidence (scrolls, ancient tablets, pictographs, petroglyphs) or studied megalithic and ancient architectural structures to study the ancient astronomical belief systems.	
Minimum Qualification	
Minimum Qualifications:	Astronomy (Masters Required)
Library	
List of suggested materials has been given to librarian?	Yes
Library has adequate materials to support course?	Yes
Distance Ed Distance Education Application	
Delivery Methods	Fully Online
Distance Education Quality	
Quality Assurance	Course objectives have not changed Course content has not changed Method of instruction meets the same standard of course quality Outside assignments meet the same standard of course quality Serves comparable number of students per section as a traditional course in the same department Required texts meet the same standard of course quality
Additional Considerations	Evaluation methods are in place to produce an annual report to the Board of Trustee on activity in offering this course or section following the guidelines to Title 5 Section 55317 (see attachment) and to review the impact of distance education on this program through the program review process specified in accreditation standard 2B.2. Determination and judgments about the equality of the distance education course were made with the full involvement of the faculty as defined by Administrative Regulation 5420 and college curriculum approval procedures. Adequate technology resources exist to support this course/section Library resources are accessible to students Specific expectations are set for students with respect to a minimum amount of time per week for student and homework assignments Adequately fulfills ?effective contact between faculty member and student? required by Title 5. Will not affect existing or potential articulation with other colleges Special needs (i.e., texts, materials, etc.) are reasonable Complies with current access guidelines for students with disabilities
Guidelines and Questions for Curriculum Approval of a Distance Education Course Student Interactions	
Student-Instructor Interaction	There will be multiple, frequent and on-going communication between the instructor and each student via threaded discussions, email and online chats that occur throughout the course. These communications can be initiated by either the instructor or the student, as needed. The instructor will provide on-going feedback,

	comments and suggestions to assist and improve student performance. The instructor will also provide instructions and support as needed for course navigation. Further clarification will also be provided regarding content, exams and assignments. The instructor will also provide a virtual office and will be available to talk to students over the phone if necessary.
Student-Student Interaction	Students will participate in student-student interactions using threaded discussions. Using this asynchronous forum, students will be able to communicate with each other throughout the course regarding course material and assignments. A virtual student lounge will also be provided to encourage students to interact with each other on a more personal level.
Student-Content Interaction	Students will engage with the content regularly throughout the course. Each unit will include online lectures, video links and quizzes that will allow the student to assess their comprehension of the course content. The quizzes will provide immediate feedback and will support different student learning styles. Students will also be asked to watch online videos and perform exercises on external web sites.

Online class activities that promote class interaction and engagement	Brief Description	Percentage of Online Course Hours
Discussion Boards	Students will be required to respond to questions posted both by the instructor and other students.	25%
Online Lecture	Online PowerPoint presentations with notes and/or reading assignments from an online text along with links to external content.	23%
Videos	Students will be required to view an online video, take a quiz on the video, comment in a discussion forum on the videos assigned by the instructor.	22%
Project Presentation	At the end of the semester, collaborative groups of students will be required to prepare a PowerPoint presentation on an instructor assigned textbook chapter. They will be required to upload it to Canvas. Students are expected to answer questions about their presentation from the instructor and other students.	23%
Exams	A midterm exam and a final exam will be given.	7%

Describe how content will be organized and delivered in the interest of achieving course outcomes/objectives (e.g. what are the methods of instruction being used, technologies used, approximate time schedule, necessary instructional materials.)

The course will be divided into 15 weekly units. Each unit will be broken down into smaller modules. Each module will have introductory material in the form of a PowerPoint presentation and/or a reading assignment from a text, video presentations/animations, a discussion board and a quiz.
At the end of the semester, students will work in groups on a project such as a

PowerPoint presentation or a video presentation. Students will be required to answer questions about this from the instructor and other students. There will be a midterm exam and a final exam.
Describe the technical qualifications an instructor would need and the support that might be necessary for this course to be delivered at a distance (e.g. the college?s existing technology, CCCConfer certification, other specialized instructor training, support personnel, materials and resources, technical support, etc.)
Familiarity with Canvas. No other specialized training or support will be required. Online resources, like Google Drive, Drop Box, etc. can be used.
Describe any student support services one might want or need to integrate into the online classroom for this course (e.g. links to counseling, financial aid, bookstore, library, etc.)
Links to library databases will be provided along with links to the Disabled Student Center, Associated Students, and bookstore.
Describe how the design of the course will ensure access for students with disabilities including compliance with the regulations of Section 508 of the Rehabilitation Act.
Online lecture presentations and assignments will be made accessible by incorporating design features such as alternative text, headings for data tables, and skip navigation. Whenever possible, links to additional materials that are likewise accessible will be chosen; when that is not possible, appropriate alternative accommodations will be provided by the instructor.
Using one of the course objectives, describe an online lesson/activity that might be used in the course to facilitate student learning of that objective. Be sure the sample lesson/activity includes reference to the use of online teaching tools (such as drop box or threaded discussion, or multimedia such as Articulate, Flash, Jing, etc.).
Reading/Discussion/Writing assignment. Please read chapter 5 of your textbook, The Power of Stars: How Celestial Observations Have Shaped Civilization by Bryan E. Penprase. This assignment will be based on course objective #7. I want you to pick two cultures mentioned in the text and compare and contrast how they used certain celestial objects for creating a calendar system that helped them go from hunter-and-gatherer societies and become agricultural societies. I want you to post your thoughts onto the threaded discussion board. After discussing this assignment with fellow students, I want you to finalize your thoughts in a one page WORD document and upload it to Canvas. Look on the Canvas assignment page for the details of the format used in the WORD document (fonts, spacing, font size, etc.) Good Luck and have fun. :)
Assessment Best Practices
23%-**Major Power-Point Project** - The students will work in groups on a Power Point presentation via Google Drive, the Discussion forum, and other online accessories. At the end of the semester the groups will present their projects and will be expected to respond to questions on it from the instructor and the other students. 55%-**Exams** - There will be a midterm and a final exam 22%-**Homework** - This will include reading text chapters, taking quizzes on the chapters, using the discussion forum to discuss chapter topics. It will include watching audio/visual material and using the discussion forum to discuss this material and taking quizzes.

Santa Monica College
DE for EXISTING courses
Expanded Course Outline for GIS 23 - Intermediate Geographic Information Systems

Course Cover	
Discipline	GIS-GEOGRAPHIC INFORMATION SYSTEMS
Course Number	23
Full Course Title	Intermediate Geographic Information Systems
Cross Listed Course	GEOG 23
Catalog Course Description	This course emphasizes GIS principles and methodology used in both the private and public sectors. Hands-on applications using both raster and vector data and technology will expose students to more advanced understanding of GIS. Students will learn various methods of data acquisition, including Global Positioning Systems (GPS) as well as the World Wide Web. The add-on modules extend the analytical capabilities of ArcView and allow input of map features and conversion of feature themes from raster to vector. This course will also provide an introduction to several of ArcView's extension including Spatial Analyst and 3D Analyst. Students will complete a "Model Builder" to be used in siting new solar sites. Spatial Analysis will include slope and aspect maps, neighborhood and zone analysis. The course will present single and multi-layer statistical operations including classification, coordination, and modeling analysis.
Rationale	Update Intermediate GIS class to be offered as Distance Ed in addition to on-campus format.
Proposal Information	
Proposed Start	Year: 2016 Semester: Fall
Proposed for Distance Ed	Yes
Proposed for Global Citizenship	No
Course Unit/Hours	
Variable Hour Exist	NO
Credit Hours	Min: 3.00
Weekly Lecture Hours	Min: 3.00 (Sem: 54)
Weekly Arranged Hours	Min: 2.00 (Sem: 36)
Total Semester Instructional Hours	90.00
Load Factor	1.00
Repeatability	May be repeated 0 time(s)
Grading Methods	Letter Grade or P/NP
Transfer/General Ed	
Transferability	
Transfers to CSU	

IGETC Area:	
CSU GE Area:	
SMC GE Area:	
Program Applicability	
Designation	Credit - Degree Applicable
Pre/Corequisites & Advisories	
Prerequisite GEOG 20	
Course Objectives	
Upon satisfactory completion of the course, students will be able to:	
1. Explain the terminology used to describe spatial objects in ArcGIS software	
2. Build and complete a ?Model Builder? to perform advanced spatial analysis	
3. Create, manipulate, and query tables and charts using GIS software and SQL	
Arranged Hours Objectives	
Upon satisfactory completion of the course, students will be able to:	
1. To learn more about available data on the Internet ? who is producing it, why are they producing it, and how good is the quality and usability of the data	
2. To practice data conversion techniques (downloading, importing, converting file types, etc.)	
3. To develop a quality, GIS-ready database, of interest to the student, that will be used later for a GIS analysis project.	
Course Content	
5%	Spatial vs. Attribute Data; Operations (Data Management, spatial data input, data display and organizations)
10%	Datums, Coordinate Systems, Map Projections, Map Formats
6%	Topological and non-topological vector data, TINS, Regions, object-oriented data models, spatial data concepts
8%	Errors in digitizing, topological/non-topological editing, edgematching
10%	Linking attribute data and spatial data, relational database model, data entry, creating new attribute data
10%	Raster Data model elements, types of raster data, data structure, compression and files
10%	Vector data query, spatial data query, raster data query, geographic visualization through classification and map comparisons; buffering, map overlay, distance measurement, manipulation of maps
8%	Analysis environments, local operations, neighborhood operations, zonal operations, spatial autocorrelation
10%	Spatial Analyst tool: DEM, TIN, contouring, Hillshading, Terrain analysis, surface curvature, viewshed and watershed analysis
6%	Control Points, Trend surface analysis, regression models, Thiessen polygons, density, estimations (KERNEL), thin-plate splines, kriging

6%	GIS modeling, binary modeling, index models, regression models, process models
6%	Geographic regions, applications of regions data model, create regions, attribute data, management with regions, region-based query and overlay
5%	Networks, network applications, dynamic segmentation, event tables
Total: 100%	
Arranged Hours Instructional Activities	
Methods	Lecture and Discussion Projects
Other Methods	Exercises and assginments
Methods of Presentation	
Methods	Lab Lecture and Discussion Online instructor-provided resources Projects
Other Methods	Lectures, accompanied by diagrams, demonstrations, PowerPoint and ArcGIS exercises.
Methods of Evaluation	
Methods	• 40% - Exams/Tests Examinations (at least 2) • 25% - Lab Reports GIS computer laboratory exercises • 15% - Other Completed GIS assignments • 20% - Projects Final independent project • 100% - Total
Appropriate Textbooks	
Textbooks such as the following are appropriate:	
Formatting Style	APA
Textbooks	
1. Andy Mitchell. *The ESRI Guide to GIS Analysis, Volume 1: Geographic Patterns and Relationships*, ed. ESRI Press, 0	
2. Tim Ormsby, Jonell Alvi. *Extending ArcView GIS*, ed. ESRI Press, 0	
Assignments	
Sample Assignment	
1. Viewing a remotely sensed image draped over a terrain surface can often lead to greater understanding of the patterns in the image and how they relate to the shape of the earth's surface. Students will imagine that they are a geologist studying Death Valley, California. Both a TIN that shows the terrain and a satellite radar image that shows the roughness of the land surface have been collected. The image is highly informative, but students can add another dimension to their	

understanding by draping the image over the terrain surface. Death Valley image data was supplied courtesy of NASA/JPL/Caltech.

2. Students will create a suitability map to find the best location for a new school. Students will derive datasets of distance and slope, reclassify datasets to a common scale, then weight those that are more important to consider and combine them to find the most suitable locations. Students will then locate the optimal site using the selection tools within ArcMap.

Student Learning Outcomes
1. Students will distinguish between single and multi-layer statistical operations including classification, coordination, and modeling analysis.
2. Students will complete a ?Model Builder? to be used in siting new solar sites. Spatial Analysis will include slope and aspect maps, neighborhood and zone analysis.
3. Students will perform various methods of data acquisition, including Global Positioning Systems (GPS) as well as the World Wide Web. The add-on modules extend the analytical capabilities of ArcView and allow input of map features and conversion of feature themes from raster to vector

Minimum Qualification	
Minimum Qualifications:	Geography (Masters Required)

Library	
List of suggested materials has been given to librarian?	No
Library has adequate materials to support course?	No

Distance Ed Distance Education Application	
Delivery Methods	Fully Online

Distance Education Quality	
Quality Assurance	Course objectives have not changed Course content has not changed Method of instruction meets the same standard of course quality Outside assignments meet the same standard of course quality Serves comparable number of students per section as a traditional course in the same department Required texts meet the same standard of course quality
Additional Considerations	Determination and judgments about the equality of the distance education course were made with the full involvement of the faculty as defined by Administrative Regulation 5420 and college curriculum approval procedures. Adequate technology resources exist to support this course/section Library resources are accessible to students Specific expectations are set for students with respect to a minimum amount of time per week for student and homework assignments Adequately fulfills ?effective contact between faculty member and student? required by Title 5. Will not affect existing or potential articulation with other colleges Special needs (i.e., texts, materials, etc.) are reasonable

	Complies with current access guidelines for students with disabilities
Guidelines and Questions for Curriculum Approval of a Distance Education Course Student Interactions	
Student-Instructor Interaction	There will be multiple, frequent and on-going communication between the instructor and each student via threaded discussions, email and online chats that occur throughout the course. These communications can be initiated by either the instructor or the student, as needed. The instructor will provide on-going feedback, comments and suggestions to assist and improve student performance. The instructor will also provide instructions and support as needed for course navigation. Further clarification will also be provided regarding content, exams and assignments. The instructor will also provide a virtual office and will be available to talk to students over the phone if necessary.
Student-Student Interaction	Students will participate in student-student interactions using threaded discussions. Using this asynchronous forum, students will be able to communicate with each other throughout the course regarding course material and ArcGIS assignments. A virtual student lounge will also be provided to encourage students to interact with each other on a more personal level.
Student-Content Interaction	Students will engage with the content regularly throughout the course. Each unit will include online lectures, video links and ArcGIS exercises and assignments that will allow the student to assess their comprehension of the course content before they complete a graded assignment. The ArcGIS exercises are designed to provide immediate feedback to support different student learning styles.

Online class activities that promote class interaction and engagement	**Brief Description**	**Percentage of Online Course Hours**
Discussion Boards	Students will be required to respond to questions posted both by the instructor and other students	20%
Online Lecture	Online PowerPoint presentations with notes and/or reading assignments from an online text along with links to external content.	20%
Project Presentation	Students will work independently on a GIS project to be submitted at the end of the semester	30%
Exams	Online quizzes will be given after every unit and exams will be given after every module.	30%

Describe how content will be organized and delivered in the interest of achieving course outcomes/objectives (e.g. what are the methods of instruction being used, technologies used, approximate time schedule, necessary instructional materials.)

The course will divided in 15 units. Each unit will be broken down into smaller modules.

Each module will have introductory material in the form of a PowerPoint presentation and/or a reading assignment from an online text, video presentations/animations, a discussion board and a quiz. An exam will be given at the end of each unit. At the end of the semester, students will work independently on a project and submit their ArcGIS Maps and supporting documents. Students will be required to answer questions about this from the instructor and other students.
Describe the technical qualifications an instructor would need and the support that might be necessary for this course to be delivered at a distance (e.g. the college?s existing technology, CCCConfer certification, other specialized instructor training, support personnel, materials and resources, technical support, etc.)
A familiarization with a variety of GIS software, including ArcGIS (from ESRI), Google, and others. Course will be delivered through the current Citrix server. Students will be able to access Citrix and utilize the GIS software through either a PC or Mac/Apple platform
Describe any student support services one might want or need to integrate into the online classroom for this course (e.g. links to counseling, financial aid, bookstore, library, etc.)
Since this course relies significantly on learning a software combined with readings, online library and bookstore resources would be helpful. Materials for minor research tasks associated with some of the assignments are freely available via the World-Wide Web.
Describe how the design of the course will ensure access for students with disabilities including compliance with the regulations of Section 508 of the Rehabilitation Act.
Online lecture presentations and assignments will be made accessible by incorporating design features such as alternative text, headings for data tables, and skip navigation. Whenever possible, links to additional materials that are likewise accessible will be chosen; when that is not possible, appropriate alternative accommodations will be made by the instructor. The course will be delivered via SMC's Citrix Server
Using one of the course objectives, describe an online lesson/activity that might be used in the course to facilitate student learning of that objective. Be sure the sample lesson/activity includes reference to the use of online teaching tools (such as drop box or threaded discussion, or multimedia such as Articulate, Flash, Jing, etc.).
An online tutorial will provide students with the necessary tools to understand how GIS software displays geo-referenced features and how the “position” of these features can be displaced using various Map Projection systems. Objectives: 1. Explain the terminology used to describe spatial objects in ArcGIS software 2. Build and complete a “Model Builder” to perform advanced spatial analysis 3. Create, manipulate, and query tables and charts using GIS software and SQL Assignments: Viewing a remotely sensed image draped over a terrain surface can often lead to greater understanding of the patterns in the image and how they relate to the shape of the earth’s

surface. Students will imagine that they are a geologist studying Death Valley, California. Both a TIN that shows the terrain and a satellite radar image that shows the roughness of the land surface have been collected. The image is highly informative, but students can add another dimension to their understanding by draping the image over the terrain surface. Death Valley image data was supplied courtesy of NASA/JPL/Caltech.

Students will create a suitability map to find the best location for a new school. Students will derive datasets of distance and slope, reclassify datasets to a common scale, then weight those that are more important to consider and combine them to find the most suitable locations. Students will then locate the optimal site using the selection tools within ArcMap

Assessment Best Practices

20%-**Students will complete a semester project conducting a spatial analysis of data.** - Submission of project. Grading will be based on (1) data quality (2) analysis performed (3) cartographic skills in map-making (4) written report
40%-**Quizzes and Midterm Exam** - Two quizzes (20%) and one Midterm Exam (20%) consisting of objective questions and short-answer essays, along with a practicum to test GIS skills
25%-**Weekly lab assignments, exercises and reports** - Students will complete lab exercises, written assignments (based on readings)
15%-**Group discussions on various topics in GIS** - Students will participate in Threaded Discussions as individuals and groups on various current topics and methods in GIS

Proposal to add "Genders and Sexualities" as a category of the Global Citizenship Degree Requirement

BACKGROUND:

Global Citizenship (catalog, page 12)
Santa Monica College—a diverse and dynamic community of individuals from around the world—is committed to promoting global citizenship among its students, faculty, staff, and community.

To be a global citizen requires:

- Knowing about peoples, customs, and cultures in regions of the world beyond one's own;
- Understanding the interdependence that holds both promise and peril for the future of the global community; and
- Combining one's learning with a dedication to foster a livable, sustainable world.

Global Citizenship Requirement (catalog, page 27)

To fulfill the Global Citizenship requirement for a degree from Santa Monica College, students must successfully complete one of the courses listed below or a Santa Monica College Study Abroad experience (if completed Spring 2008 or later). The courses fall into ~~four~~ five categories: American Cultures, Genders and Sexualities [proposed], Ecological Literacy, Global Studies, and Service Learning. These courses aim to provide an awareness of the diversity of cultures within the United States and/or an appreciation for the interconnectedness of cultural, ecological, economic, political, social, and technological systems of the contemporary world. This prepares students to make a responsible contribution to a rapidly changing global society.

RATIONALE FOR ADDING THE "Genders and Sexualities" CATEGORY:

Genders and Sexualities studies focus on the complex interaction of gender and sexuality with nearly all aspects of life, including, but not limited to, work and the economy, political and legal issues, family, media, education, and the environment. As such, this category is central to the vision expressed by SMC that, "Students learn to contribute to the global community as they develop an understanding of their relationship to diverse social, cultural, political, economic, technological and natural environments." Our world is becoming increasingly aware of diverse forms of genders and sexualities as well as systemic oppressions targeting those diverse forms. It is, therefore, important for our students to develop a critical and conscious acknowledgement of, understanding of, and respect for the diversity in human experiences and expressions.

Moreover, Genders and Sexualities studies are dedicated to the study of gender and sexuality in their complex articulation with race, ethnicity, class, religion, and nationality. Becoming global citizens requires an ability to analyze, critique and construct paradigms respecting and valuing the diversity that surrounds us, including diversity in genders and sexualities. For these reasons, we propose the addition of the category of "Genders and Sexualities" as part of the Global Citizenship Degree Requirement.

Global Citizenship Information Sheet

(For Courses To Fulfill SMC's Global Citizenship Associate Degree Requirement)

To fulfill the Global Citizenship requirement for a degree from Santa Monica College, students must successfully complete a minimum of 3 units from a list of courses approved with the Global Citizenship designation. These courses fall into **one** of the following ~~four~~ five categories:

1) American Cultures:

An American Cultures course utilizes a comparative framework to explore how the American identity and experience have been shaped—and will continue to be shaped—by a diverse array of cultural influences and traditions. An American Cultures course compares and contrasts at least three American cultures including Latino American, African American, Asian American, Native American and European American.

In order for a course to be considered under the American Cultures category, the course must meet **both** of the following two criteria:

- Utilizes a comparative framework to explore how the American identity and experience have been shaped—and will continue to be shaped—by a diverse array of cultural influences and traditions
- Compares and contrasts at least three American cultures including Latino American, African American, Asian American, Native American and European American.

2) Genders and Sexualities:

A Genders and Sexualities course is substantially focused on how the constructions and varieties of genders and sexualities—as well as identities—are formed, reformed, defined, redefined and experienced in a contemporary context.

In order for a course to be considered under the Gender and Sexualities category, the course content must focus primarily on **at least one** of the following 5 areas:

- How the constructions of genders and sexualities—as well as identities—are formed, reformed, defined, redefined and experienced by a variety of communities, cultures, and societies.
- Application of theoretical perspectives based in gender relations to understand social phenomena.
- An examination of the experiences of diverse gender and sexual identities and expressions.
- An exploration of how collective identity and experiences have been shaped—and will continue to be shaped—by individuals and groups of diverse gender and sexual identities and expressions.
- The intersectionality of genders and sexualities with race, ethnicity, class, religion, and nationality.

3) Ecological Literacy:

Ecological literacy requires interdisciplinary understanding of both nature and humanity. This includes scientific examination of the interactions between and within the systems and cycles of the atmosphere, lithosphere, and hydrosphere, which together provide the basis for life on Earth. Ecological literacy also includes awareness and understanding of the many continuing impacts that human beings have had on natural environments, at scales ranging from the local to the global, and how those impacts are linked to the sustainability of social, cultural, and political-economic systems. Any course whose content **focuses primarily on one or more** of four areas (see below) will be considered for the Ecological Literacy category.

In order for a course to be considered under the Ecological Literacy category, the course content must focus primarily on **at least one** of the following four areas:

- Environmental values, debates and/or challenges
- Scientific understanding of Earth's natural systems and cycles, emphasizing humanity's role in the continuing viability of habitats and/or application of scientific principles and techniques to study the causes of and potential solutions to environmental problems
- Analysis of human activity and its impact on Earth's livability and sustainability
- Analysis of environmental problems and solutions as they apply to the understanding and practical application of technologies aimed at curbing the adverse impact of human activity on the natural environment and/or improving the sustainable use of natural resources.

4) Global Studies:

A course that fulfills this area will explore the factors that have shaped our global community and provide students with an understanding of their roles in relationship to other peoples and systems on a global level. To be included in the Global Studies category a **course must meet three criteria (see below).**

In order for a course to be considered under the Global Studies category, the course must meet **all of the following three** criteria:

- Course content is explored primarily through a global perspective and a comparative and/or analytical framework is used. At least two societies or cultures outside the United States and their global impact are explored.
- Course material has contemporary significance. For example, a course would not only examine a period of history but the ways in which that period of history impacts the way we live in the world today.
- Course content addresses at least two interconnected systems (such as cultural, ecological, economic, political, social and technological systems).

5) Service Learning:

Service learning is an instructional method that fosters civic responsibility by integrating community service with academic instruction. A course must utilize service learning as a *significant* pedagogy in reaching the course objectives and student learning outcomes as expressed on the course outline of record. In order for the pedagogy to be considered "significant", a **course must meet four criteria (see below).**

In order for a course to be considered under the Service Learning category, the course must meet **all of the following four** criteria:

- The required hours of service must be at least 20 per semester.
- The academic rigor of the course must be supported by the use of service learning.
- Structured written and/or oral reflection activities must be ongoing, involve instructor feedback to students, and be structured in such a way to help achieve the course and/or assignment objectives.
- The service-learning component of the course must be integrated into the grading criteria for the course such that it contributes to at least 40% of the grade. (Please note: the hours completed are NOT part of the grade, the academic work resulting from the service learning hours contribute to at least 40% of the grade.)

NOTE: Alternatively, a student may satisfy the degree requirement by successfully completing a Santa Monica College Study Abroad experience (if completed Spring 2008 or later).

- It is expected that at least one student learning outcome (SLO) of the course reflects the focus for one of the particular categories (and specific criteria) above.

- It is expected that the particular focus of the category is integrated **throughout the course content, objectives, assignments, etc**.

SANTA MONICA COLLEGE
PROGRAM OF STUDY

Basic Computer Operations
Certificate of Completion (Noncredit)

This noncredit program provides workforce preparation by offering a basic introduction to personal computers and basic internet skills that can be used in daily tasks.

Program Learning Outcomes:

Upon completion of this workforce preparation program, students will demonstrate a basic understanding of using personal computers, such as creating and saving documents and basic Internet skills such as using the Internet safely and sending/receiving emails with attachments.

Area of Emphasis

Required Courses		Units
EC-OCC E00	Basic Computer Training	0
EC-OCC E20	Using The Internet Safely	0
Total Units for Area of Emphasis:		**0**

PID 292

SANTA MONICA COLLEGE
PROGRAM OF STUDY

Electronic Medical Records Clerk
Department Certificate

This program prepares students for entry-level clerical positions involving Electronic Health Records. Training is provided in computer basics, medical terminology, and electronic records technology. EHR clerks work in hospitals, physicians' offices, and nursing homes—typically under the direction of a manager or supervisor.

DEPARTMENT CERTIFICATE REQUIREMENTS:

- satisfactory completion of the Area of Emphasis
- a grade of C or higher in each course in the Area of Emphasis
- completion of at least 50% of Area of Emphasis units at SMC

Note: Department Certificates are not notated on student transcripts. Student must submit a petition to the relevant academic department.

Additional information for the Certificate is available at the Transfer/Counseling Center and at www.smc.edu/articulation.

CATALOG RIGHTS: A student may satisfy the requirements of a Department Certificate that were in effect at any time of the student's continuous enrollment. Continuous enrollment is defined as enrollment in consecutive Fall and Spring semesters until completion.

Program Learning Outcomes:

Upon completion of the program, students will be able to capture and store patient data into an EHR (Electronic Health Records) system. Using EHR software, students will document patient encounters and process physician orders in an electronic system.

Justification for Proposal:

As part of Doing What Matters initiative, skills-builder students are experienced workers who take a limited number of community college courses to maintain and add to skill-sets required for ongoing employment and career advancement. Although numerous research studies have shown that skills-builder students secure significant earnings gains, they are not currently included in state accountability metrics. Many practitioners are now calling for skills-builder outcomes to be factored into statewide measures and goals. For example, recognizing skills-builder outcomes was a recurring theme in regional meetings held in early 2015 to inform the Board of Governor's Task Force on Workforce, Job Creation, and a Strong Economy. Short-Term Skill Certificates provide basic training for (1) entry-level positions or a specific skill set needed for a particular industry and (2) offer a pathway to a higher certificate or degree.

Area of Emphasis

Basic Electronic Medical Records Clerk		**Units**
CIS 4	Business Information Systems with Applications	3
OFTECH 20	Medical Vocabulary	3
OFTECH 28	Electronic Health Records	3

Total Units for Area of Emphasis: 9

PID 297

SANTA MONICA COLLEGE
PROGRAM OF STUDY

Hospital Inpatient Coder
Department Certificate

Coding is the transformation of healthcare diagnoses, procedures, medical services, and equipment into universal medical alphanumeric codes for statistical reporting and reimbursement purposes. A Hospital Inpatient Coder reviews and codes information for patients who stay at least overnight in a hospital facility. This certificate program provides training in medical terminology, inpatient coding, and billing, reimbursement, and collection procedures.

DEPARTMENT CERTIFICATE REQUIREMENTS:

- satisfactory completion of the Area of Emphasis
- a grade of C or higher in each course in the Area of Emphasis
- completion of at least 50% of Area of Emphasis units at SMC

Note: Department Certificates are not notated on student transcripts. Student must submit a petition to the relevant academic department.

Additional information for the Certificate is available at the Transfer/Counseling Center and at www.smc.edu/articulation.

CATALOG RIGHTS: A student may satisfy the requirements of a Department Certificate that were in effect at any time of the student's continuous enrollment. Continuous enrollment is defined as enrollment in consecutive Fall and Spring semesters until completion.

Program Learning Outcomes:

Upon completion of the program, students will demonstrate knowledge of medical terminology and correctly code inpatient facility services and diagnoses. Using knowledge of billing principles, students will demonstrate an understanding of billing, reimbursement, and collection procedures.

Justification for Proposal:

As part of Doing What Matters initiative, skills-builder students are experienced workers who take a limited number of community college courses to maintain and add to skill-sets required for ongoing employment and career advancement. Although numerous research studies have shown that skills-builder students secure significant earnings gains, they are not currently included in state accountability metrics. Many practitioners are now calling for skills-builder outcomes to be factored into statewide measures and goals. For example, recognizing skills-builder outcomes was a recurring theme in regional meetings held in early 2015 to inform the Board of Governor's Task Force on Workforce, Job Creation, and a Strong Economy. Short-Term Skill Certificates provide basic training for (1) entry-level positions or a specific skill set needed for a particular industry and (2) offer a pathway to a higher certificate or degree.

Area of Emphasis

Basic Inpatient Coding		**Units**
OFTECH 20	Medical Vocabulary	3
OFTECH 25	Medical Coding/Billing 2	3
OFTECH 26	Medical Coding/Billing 3	3

Total Units for Area of Emphasis: 9

PID 299

Sociology
Associate in Arts for Transfer (AA-T)

The Associate in Arts in Sociology for Transfer (AA-T) involves the scientific study of society, social institutions and social relationships. The course of study provides students the opportunity to acquire skills in research, information gathering, analytical and critical thinking, problem solving, and written and verbal communication.

Upon completion of the Associate in Arts in Sociology for Transfer (AA-T), students will have a strong academic foundation in the field and be prepared for upper division baccalaureate study. Completion of the degree indicates that the student will have satisfied the lower division requirements for transfer into a Sociology program for many campuses in the California State University system.

The Associate in Arts degree for Transfer (AA-T) is designed to facilitate transfer admission to a CSU in a similar major. If you are considering transfer to a UC, private, or out-of-state school, consult a counselor regarding the transfer requirements of that institution.

ASSOCIATE DEGREE FOR TRANSFER REQUIREMENTS:

- completion of at least 60 CSU-transferable semester units including:
  - completion of the Area of Emphasis with a grade of C or higher in each course or with a P if the course was taken on a Pass/No Pass basis, and the P is equal to a C or higher (Title 5 §55063)
  - completion of either CSU GE or IGETC; students transferring to CSU using IGETC must complete Area 1C (see www.smc.edu/articulation or visit the Transfer/Counseling Center)
  - a minimum of 12 degree applicable semester units completed at SMC
  - a minimum overall GPA of 2.0 in all CSU-transferable units (Note: While a minimum GPA of 2.0 is required for admission to the CSU, some majors/campuses may require a higher GPA. Nonresident and international students may be required to have a higher minimum GPA. For more information consult a counselor.)

CATALOG RIGHTS:A student may satisfy the requirements of a Degree that were in effect at any time of the student's continuous enrollment. Continuous enrollment is defined as enrollment in consecutive Fall and Spring semesters until completion.

Program Learning Outcomes:

Upon completion of the program, students will demonstrate, through written and oral academic work, critical examination of the influence of social forces on groups and individuals as well as the impact of groups and individuals on society. Students will be able to identify, apply and critique the use of the scientific method as it relates to the study of society.

Area of Emphasis

Required Introduction: (3 units)		**Units**
SOCIOL 1	Introduction To Sociology	3
or		
SOCIOL 1s	Introduction To Sociology - Service Learning	3

Required Core: (6 units) Select 2 of the following courses:		**Units**
SOCIOL 2	Social Problems	3
or		
SOCIOL 2s	Social Problems-- Service Learning	3

SOCIOL 4	Sociological Analysis	3
MATH 54	Elementary Statistics	4

List A Electives: (6 units) Select 2 of the following courses:		**Units**
Any course not used above		
SOCIOL 12	Sociology Of The Family	3
SOCIOL 30	African Americans In Contemporary Society	3

SOCIOL 31	Latinas/os In Contemporary Society	3
SOCIOL 32	Asian Americans In Contemporary Society	3
SOCIOL 33	Sociology Of Sex And Gender	3
SOCIOL 34	Racial And Ethnic Relations In American Society	3
PSYCH 13	Social Psychology	3

List B Electives: (3 units) Select 1 of the following courses:		**Units**
Any course not used above		
Any course which satisfies CSU GE Area D		
BUS 5	Business Law	3
BUS 6 *(same as ACCTG 26)*	Advanced Business Law	3
ENGL 2	Critical Analysis And Intermediate Composition	3
HIST 47	The Practice Of History	3
PHILOS 7	Logic And Critical Thinking	3
PHILOS 9	Symbolic Logic	3

Total Units for Area of Emphasis: 18

Santa Monica College Curriculum Committee
Instructions for Development and Approval of Credit CTE Degrees or Certificates

Three types of credit CTE programs exist:

- **Associate of Science Degree**

  At least 18 units in an area of emphasis (aka "major") along with other degree requirements including GE and Global Citizenship requirements. Must receive SMC Curriculum Committee, Academic Senate, and Board of Trustees approvals, as well as LAOCRC (Los Angeles Orange County Regional Consortium) and CCCCO (California Community College Chancellor's Office) approvals; appears on student transcript; financial aid eligible.

- **Certificate of Achievement**

  12 or more units*; must receive SMC Curriculum Committee, Academic Senate, and Board of Trustees approvals, as well as LAOCRC (Los Angeles Orange County Regional Consortium) and CCCCO (California Community College Chancellor's Office) approvals; appears on student transcript; financial aid eligible if 16 or more units.

- **Department Certificate**

  Fewer than 12 units*; must receive SMC Curriculum Committee, Academic Senate, and Board of Trustees approvals; not LAOCRC or CCCCO approved; not financial aid eligible. Must be supported by either labor market demand data and/or constitute a milestone in a larger career pathway.

*Certificates of 12-17 units may be offered as either Certificates of Achievement (preferred) or as Department Certificates. If a department believes there is a significant benefit to offering a certificate of 12-17 units as a Department Certificate rather than as a Certificate of Achievement, this must be explained to the Curriculum Committee as part of the rationale.

Approval Process for Associate Degrees and Certificates of Achievement:

To streamline the approval process, thereby minimizing the total time required to offer new programs to our students, departments should pursue regional and local approvals simultaneously. The following steps are recommended to ensure the process is as efficient as possible.

Step 1:

- Submit a Notice of Intent to create/modify a program to the SMC Office of Workforce Development. This prompts the Office of Workforce Development to request Labor Market Information (LMI) from the regional Center for Excellence or to obtain other Chancellor's Office-approved LMI for the program. It also prompts submission of a Notice of Intent to the LAOCRC.
- Hold a meeting of your local and/or regional Industry Advisory Board for the program to discuss the proposed program and obtain minutes that document the Board's recommendation to pursue the proposal. A template for Advisory Board minutes is available from SMC's Office of Workforce Development.
- Complete the LAOCRC Program Application Form.

Step 2:

- Enter the new program or program revisions in CurricUNET. Attach the following mandatory documents:
    - Advisory Board Minutes
    - LMI
    - Completed LAOCRC Form

Approval Process for Department Certificates:

Step 1:

To help the Curriculum Committee understand the purpose of the program and its benefit to students, one or both of the following must be true:

1) The certificate prepares students directly for entry into documented employment opportunities. In this case, submit a Notice of Intent to create/modify a program to the SMC Office of Workforce Development. This prompts the Office of Workforce Development to request Labor Market Information (LMI) from the regional Center for Excellence or to obtain other Chancellor's Office approved LMI for the program.

2) The program serves as a milestone in a larger career pathway. In this case, attach a document outlining the larger curricular pathway and how this certificate fits into that plan.

Step 2:

- Enter the new program or program revisions in CurricUNET. Attach the following mandatory documents:
    - LMI (if Option 1 above)
    - Pathway Description (if Option 2 above)