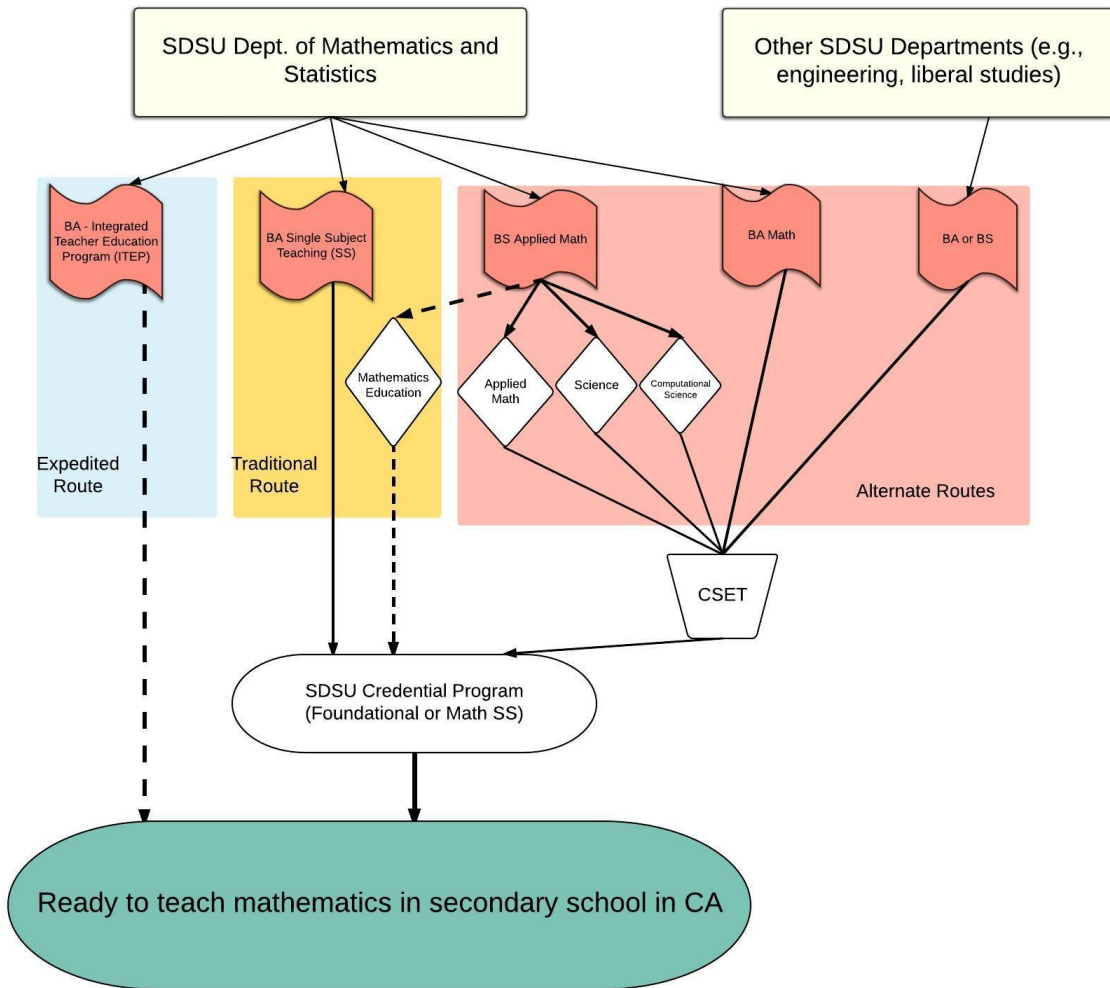


# Advising for Single Subject Mathematics Worksheet

Student Name: \_\_\_\_\_ Date \_\_\_\_\_

Current and Proposed Pathways to Facilitating Attainment of teaching Credential and Readiness for Classroom Experience



- - - - - ► \*Indicates proposed route

Required Courses

LOWER DIVISION

Course	Units	Complete?
Math 150	4	
Math 151	4	
Math 241	1	
Math 245	3	
Math 252	4	
Math 254	3	
Stat 250	3	
TE 211		

UPPER DIVISION

Course	Units	Complete?
Math 302	3	
Math 303	3	
Math 414	3	
Math 496, 509, 510	3	
Math 330	3	
Math 320	3	
Stat 550	3	
Math ____	3	

\*Maximum 48 units of mathematics applicable toward BA.

School year	Fall	Spring	Summer
			Calc I or II (if needed)
	TE -211A		
			ED 451, TE 280
	M 414		

If student is interested in applying for a credential program, many (including SDSU) require the following pre-requisite courses:

- ED 451: Introduction to Multicultural Education (3 units)
- TE 280: Health Education for Teachers (1 unit)
- SPED 450: Classroom Adaptations for Special Populations (2 units)

Course Title	Catalog Description
MATH 150. Calculus I (4) [GE]	Three lectures and two hours of activity. Prerequisites: Knowledge of algebra, geometry, and trigonometry as demonstrated by either (1) satisfactory completion of Mathematics 141 with a grade of C (2.0) or better; or (2) satisfaction of the EntryLevel Mathematics requirement and qualification on the Mathematics Departmental Precalculus Proficiency Examination. Proof of completion of prerequisites required. Algebraic and transcendental functions. Continuity and limits. The derivative and its applications. The integral and the fundamental theorem of calculus.
MATH 151. Calculus II (4) [GE]	Three lectures and two hours of activity. Prerequisite: Mathematics 150 with a grade of C (2.0) or better. Proof of completion of prerequisite required. Techniques and applications of integration. Improper integrals. Differential equations. Infinite series. Conic sections. Curves in parametric form, polar coordinates.
MATH 241. Mathematics Software Workshop (1)	Prerequisite: Mathematics 150. Introduction to dynamic geometry software to include Geometer's Sketchpad and GeoGebra. Constructions in Euclidean geometry, exploration of symmetry and plane transformations, graphing of functions and algebraic equations.
MATH 245. Discrete Mathematics (3) [GE]	Prerequisite: Mathematics 124 or 150 with a grade of C (2.0) or better. Recommended: Mathematics 151. Logic, methods of proof, set theory, number theory, equivalence and order relations, counting (combinations and permutations), solving recurrence relations
MATH 252. Calculus III (4) [GE]	Prerequisite: Mathematics 151 with a grade of C (2.0) or better. Functions of several variables. Vectors. Partial derivatives and multiple integrals. Line integrals and Green's Theorem.
MATH 254. Introduction to Linear Algebra (3) [GE]	Prerequisite: Mathematics 151 with a grade of C (2.0) or better. Matrix algebra, Gaussian elimination, determinants, vector spaces, linear transformations, orthogonality, eigenvalues, and eigenvectors.
STAT 250. Statistical Principles and Practices (3) [GE]	Prerequisite: Satisfaction of the Entry-Level Mathematics requirement. Descriptive statistics, data displays, measures of central tendency and variability, random variables, sampling distribution. Estimation and hypothesis tests for means and proportions, linear regression and correlation. Not open to students with credit in Statistics 119. Students with credit or concurrent registration in the following lower division statistics courses other than Statistics 119 will be awarded a total of four units for the two (or more) courses: Statistics 250; Administration, Rehabilitation and Postsecondary Education 201; Biology 215; Civil Engineering 160; Economics 201; Political Science 201; Psychology 280; Sociology 201.
TE 211A. Field Experience in Mathematics (1) Cr/NC	One lecture and 10 hours of fieldwork. Prerequisite: Recommended for sophomore or higher level students. Guided classroom observations for prospective middle and high school mathematics teachers. Mathematics education and strategies that promote professional development. Teaching in culturally and linguistically diverse school settings. (Formerly numbered Teacher Education 211.)

MATH 302. Transition to Higher Mathematics (3)	Prerequisite: Mathematics 141 or 150. Selected topics in mathematics to emphasize proof writing and problem solving. Intended for those planning to teach secondary school mathematics.
MATH 303. History of Mathematics (3) [GE]	Prerequisite: Mathematics 141 or completion of the General Education requirement in Foundations of Learning IIA., Natural Sciences and Quantitative Reasoning for nonmajors. Major currents in the development of mathematics from ancient Egypt and Babylon to late nineteenth century Europe.
MATH 414. Mathematics Curriculum and Instruction (3)	Prerequisites: Senior standing and 12 upper division units in mathematics. Historical development of mathematics and mathematics curriculum. Principles and procedures of mathematics instruction in secondary schools. For secondary and postsecondary teachers and teacher candidates. Course cannot be used as part of the major or minor in mathematical sciences with exception of major for the single subject teaching credential.
MATH 509. Computers in Teaching Mathematics (3)	Two lectures and three hours of laboratory. Prerequisite: Mathematics 252 with a grade of C (2.0) or better. Proof of completion of prerequisite required: Copy of transcript. Solving mathematical tasks using an appropriate computer interface, and problem-based curricula. Intended for those interested in mathematics teaching.
MATH 510. Introduction to the Foundations of Geometry (3)	Prerequisite: Mathematics 151 with a grade of C (2.0) or better. Proof of completion of prerequisite required: Copy of transcript. The foundations of Euclidean and hyperbolic geometries. Highly recommended for all prospective teachers of high school geometry
MATH 521A. Abstract Algebra (3)	Prerequisites: Mathematics 245 and 254 with a grade of C (2.0) or better in each course. Proof of completion of prerequisites required: Copy of transcript. Elementary number theory and rings to include ideals, polynomial rings, quotient rings, ring homomorphisms and isomorphisms. Introduction to basic aspects of group theory
MATH 534A. Advanced Calculus I (3)	Prerequisites: Mathematics 245 and either 254 or 342A with a grade of C (2.0) or better in each course. Proof of completion of prerequisites required: Copy of transcript. Completeness of the real numbers and its consequences, sequences of real numbers, continuity, differentiability and integrability of functions of one real variable.
STAT 550. Applied Probability (3)	Prerequisites: Mathematics 151 and 254. Computation of probabilities via enumeration and simulation, discrete and continuous distributions, moments of random variables. Markov chains, counting and queuing processes, and selected topics.
One upper division elective	Electives could be any other course with a number > 330