Course Name	Faculty Qualifications Needed	Related Disciplines	Acceptable Alternative Qualifications
MATH 1013 Contemporary Mathematics	Earned Master's or Doctorate degree in Mathematics, Applied Mathematics in the teaching discipline; or Masters or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Statistics, Quantitative Methods, Mathematics Education	Acceptable alternative qualifications include substantial professional experience in mathematics or quantitative problem-solving, such as proven expertise in inductive and deductive reasoning, probability, and statistics. Relevant professional certifications, licenses, or notable scholarly work (e.g., peer-reviewed articles or conference presentations in mathematics or mathematics education) will also be considered.
MATH 1110 College Algebra I	Earned Master's or Doctorate degree in Mathematics, Applied Mathematics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline and at least 18 graduate semester hours in the teaching discipline.	Mathematics Education, Quantitative Methods, Algebraic Structures	Acceptable alternative qualifications include substantial professional experience in mathematics education or quantitative analysis, with proven expertise in functions, inequalities, polynomials, exponents, radicals, logarithms, and exponential functions. Relevant professional certifications, licenses, or notable scholarly work (e.g., peer-reviewed articles or conference presentations in mathematics or mathematics education) will also be considered.
MATH 1115 Fundamentals of Problem-Solving	Earned Master's or Doctorate degree in Mathematics, Applied Mathematics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline and at least 18 graduate semester hours in the teaching discipline.	Mathematics Education, Logic, Combinatorics	Acceptable alternative qualifications include substantial professional experience in problem-solving instruction, including familiarity with Polya's theories and methods. Relevant professional certifications, licenses, or notable scholarly work (e.g., peer-reviewed articles or conference presentations in mathematics education or problem-solving strategies) will also be considered.
MATH 1410 Structure of the Number System I	Earned Master's or Doctorate degree in Mathematics, Mathematics Education, Applied Mathematics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline and at least 18 graduate semester hours in the teaching discipline.	Elementary Education Mathmematics or Mathematics Education	Acceptable alternative qualifications include substantial professional experience in teaching or developing elementary mathematics curricula, including familiarity with set theory, number theory, basic geometry, measurement, and elementary statistics. Relevant professional certifications, licenses, or notable scholarly work (e.g., peer-reviewed articles or conference presentations in mathematics education) will also be considered.
MATH 1420 Structure of the Number System II	Earned Master's or Doctorate degree in Mathematics, Applied Mathematics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Elementary Education Mathmematics or Mathematics Education	Acceptable alternative qualifications include substantial professional experience in designing and teaching elementary mathematics concepts, including set theory, numeration systems, number theory, algorithms for fundamental operations, geometry, and elementary statistics. Relevant professional certifications, licenses, or notable scholarly work (e.g., peer-reviewed articles or conference presentations in mathematics education) will also be considered.
MATH 1710 Pre-Calculus Algebra	Earned Master's or Doctorate degree in Mathematics, Applied Mathematics, Mathematics Education in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Calculus, Algebra, Mathematical Analysis	Acceptable alternative qualifications include substantial professional experience teaching or applying algebraic concepts, including polynomial, rational, exponential, and logarithmic functions, as well as matrices. Relevant professional certifications, licenses, or notable scholarly work (e.g., peer-reviewed articles or conference presentations in mathematics or mathematics education) will also be considered.

MATH 1720 Precalculus Trigonometry	Earned Master's or Doctorate degree in Mathematics, Applied Mathematics, Mathematics Education in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Trigonometry, Analytical Geometry, Calculus	Acceptable alternative qualifications include substantial professional experience in teaching or applying advanced trigonometry concepts, right triangle trigonometry, conic sections, analytic geometry, and sequences. Relevant professional certifications, licenses, or notable scholarly work (e.g., peer-reviewed articles or conference presentations in mathematics or mathematics education) will also be considered.
MATH 1730 Precalculus Algebra and Trigonometry	Earned Master's or Doctorate degree in Mathematics, Applied Mathematics, Mathematics Education in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Calculus, Algebra, Trigonometry, Analytical Geometry	Acceptable alternative qualifications include substantial professional experience teaching or applying integrated college algebra and trigonometry concepts, including polynomials, rational functions, exponential and logarithmic functions, and conic sections. Relevant professional certifications, licenses, or notable scholarly work (e.g., peer-reviewed articles or conference presentations in mathematics or mathematics education) will also be considered.
MATH 1830 Basic Calculus I	Earned Master's or Doctorate degree in Mathematics, Applied Mathematics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Business Calculus, Applied Economics, Quantitative Methods	Acceptable alternative qualifications include substantial professional or academic experience in differential and integral calculus as applied to economics, business, or social sciences. Demonstrated expertise through publications, conference presentations, or professional experience involving quantitative modeling or problem-solving in these fields will also be considered.
MATH 1900 Special Topics	Earned Master's or Doctorate degree in Mathematics, Applied Mathematics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Data Science, Mathematical Modeling	Acceptable alternative qualifications include significant professional or academic experience relevant to the specific topic being taught in the course. This may include applied research, teaching specialized mathematical content, or development of mathematics curriculum aligned with the special topic. Publication or professional engagement in the designated area may also be considered.
MATH 1910 Calculus I	Earned Master's or Doctorate degree in Mathematics, Applied Mathematics, Theoretical Mathematics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Vector Calculus, Multivariable Calculus, Mathematical Analysis, Calculus Education	Acceptable alternative qualifications include substantial professional or academic experience in differential and integral calculus and their applications across disciplines such as physics, chemistry, and biology. Demonstrated expertise through publications, conference presentations, or professional experience involving advanced calculus concepts and problem-solving within STEM fields will also be considered.
MATH 1911 Honors Calculus I	Earned Master's or Doctorate degree in Mathematics, Applied Mathematics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Vector Calculus, Multivariable Calculus, Mathematical Analysis, Calculus Education	Acceptable alternative qualifications include substantial teaching experience in undergraduate calculus or honors mathematics programs, with demonstrated expertise in topics such as limits, derivatives, integrals, and their applications. Evidence of curriculum development for honors or advanced placement courses, experience mentoring students in advanced mathematics, or scholarly contributions in mathematical pedagogy or analysis may also be considered.
MATH 1920 Calculus II	Earned Master's or Doctorate degree in Mathematics, Applied Mathematics,Theoretical Mathematics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Vector Calculus, Multivariable Calculus, Mathematical Analysis, Calculus Education	Acceptable alternative qualifications include substantial professional or academic experience in advanced calculus, particularly involving derivatives and integrals of trigonometric, logarithmic, and exponential functions, integration techniques, sequences, and series. Demonstrated expertise through publications, conference presentations, or professional experience integrating these concepts in STEM fields will also be considered.

MATH 2110 Calculus III	Earned Master's or Doctorate degree in Mathematics, Applied Mathematics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Vector Calculus, Multivariable Calculus, Mathematical Analysis, Calculus Education	Acceptable alternative qualifications include substantial professional or academic experience with advanced calculus concepts, particularly involving vector functions, three-dimensional space, partial derivatives, multiple integrals, line integrals, and their applications. Demonstrated expertise through publications, conference presentations, or professional experience utilizing advanced calculus in STEM fields will also be considered.
MATH 2500 Mathematics Research Experience I	Earned Master's or Doctorate degree in Mathematics, Applied Mathematics, Mathematics Education in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Theoretical Mathematics, Research Methodology	Acceptable alternative qualifications include substantial professional or academic experience in mathematical research, including reading and writing mathematics, logic, research methods, and mathematical typesetting (e.g., LaTeX). Demonstrated expertise through publications, conference presentations, or experience mentoring student research projects will also be considered.
MATH 3120 Ordinary Differential Equations	Earned Master's or Doctorate degree in Mathematics, Applied Mathematics, Engineering in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Physics, Applied Mathematics	Acceptable alternative qualifications include substantial professional or academic experience in ordinary differential equations, Fourier series, and Laplace transforms, particularly with applications to mechanical and electrical systems. Demonstrated expertise through research, publications, conference presentations, or industry practice in relevant fields will also be considered.
MATH 3130 Introduction to Mathematical Software	Earned Master's or Doctorate degree in Mathematics, Computer Science, Applied Mathematics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Scientific Computing, Software Engineering, Computational Mathematics	Acceptable alternative qualifications include substantial professional or academic experience in developing and using mathematical software tools to evaluate derivatives, integrals, sums, and solve equations. Experience with 2D and 3D graphing, programming fundamentals (variables, control structures, arrays, strings), and mathematical typesetting (e.g., LaTeX) is also valuable. Demonstrated expertise through publications, conference presentations, or professional experience in computational mathematics, programming, or related fields will be considered.
MATH 3210 Introduction to Number Theory	Earned Master's or Doctorate degree in Mathematics, Theoretical Mathematics, Applied Mathematics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Discrete Mathematics, Abstract Algebra, Mathematical Structures	Acceptable alternative qualifications include substantial professional or academic experience in number theory, including concepts like divisibility, congruences, Diophantine equations, Euler's function, Wilson's theorem, and the Chinese remainder theorem. Demonstrated expertise through publications, conference presentations, or professional practice in these areas will also be considered.
MATH 3500 Mathematics Research Experience II	Earned Master's or Doctorate degree in Mathematics, Applied Mathematics, Theoretical Mathematics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Theoretical Mathematics, Research Methodology	Acceptable alternative qualifications include substantial professional or academic experience in mathematical research, with an emphasis on writing and presentation of research findings. Familiarity with reading and writing mathematics, logic, research methods, and typesetting software (e.g., LaTeX) is also valuable. Demonstrated expertise through publications, conference presentations, or experience mentoring student research projects will be considered.

MATH 3510 Intermediate Analysis	Earned Master's or Doctorate degree in Mathematics, Applied Mathematics, Theoretical Mathematics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Real Analysis, Mathematical Analysis, Advanced Calculus	Acceptable alternative qualifications include substantial professional or academic experience in real variable calculus, including mastery of topics such as limits, sequences, continuity, the Bolzano-Weierstrass theorem, the Heine-Borel theorem, and differentiability. Demonstrated expertise through research, publications, conference presentations, or direct teaching experience in higher-level analysis will also be considered.
MATH 3610 Linear Algebra	Earned Master's or Doctorate degree in Mathematics, Applied Mathematics, Computational Mathematics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Matrix Theory, Abstract Algebra, Theoretical Mathematics	Acceptable alternative qualifications include substantial professional or academic experience in linear algebra concepts such as homogeneous and non-homogeneous systems, matrix algebra, determinants, vector spaces, linear transformations, eigenvalues, and eigenvectors. Demonstrated expertise through research, publications, conference presentations, or practical applications of linear algebra in various STEM fields will also be considered.
MATH 3620 Linear Algebra II	Earned Master's or Doctorate degree in Mathematics, Applied Mathematics, Computational Mathematics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Advanced Linear Algebra, Abstract Algebra	Acceptable alternative qualifications include substantial professional or academic experience in advanced linear algebra concepts, including linear transformations, rank, eigenvalues, eigenvectors, and the spectral theorem. Demonstrated expertise through research, publications, conference presentations, or practical applications of these topics in various STEM fields will also be considered.
MATH 3640 Modern Algebra I	Earned Master's or Doctorate degree in Mathematics, Theoretical Mathematics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Abstract Algebra, Algebraic Structures, Number Theory	Acceptable alternative qualifications include substantial professional or academic experience in advanced algebraic structures, such as equivalence relations, mappings, groups, subgroups, homomorphisms, factor groups, the Fundamental Theorem of Finite Abelian Groups, rings, ideals, factor rings, and fields. Demonstrated expertise through research, publications, conference presentations, or teaching experience in abstract algebra or closely related fields will also be considered.
MATH 3710 Teaching Mathematics in the Secondary School	Earned Master's or Doctorate degree in Mathematics Education, Curriculum & Instruction, Mathematics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Secondary Education Mathematics	Acceptable alternative qualifications include substantial professional experience in teaching mathematics at the middle or high school level, including expertise in materials, methods, and active participation strategies for mathematics instruction. Demonstrated knowledge through teaching experience, curriculum design, field-based practices, publications, or conference presentations on effective secondary mathematics teaching will also be considered.
MATH 3810 Geometry	Earned Master's or Doctorate degree in Mathematics, Theoretical Mathematics, Geometry in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Geometry, Advanced Mathematics	Acceptable alternative qualifications include substantial professional or academic experience in advanced geometry, particularly Euclidean and non-Euclidean concepts such as the parallel postulate and hyperbolic geometry. Demonstrated expertise through research, publications, conference presentations, or teaching experience in geometry or closely related fields will also be considered.

MATH 4310 Topology I	Earned Master's or Doctorate degree in Mathematics, Theoretical Mathematics, Topology in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Set Theory, Geometric Topology, Algebraic Topology	Acceptable alternative qualifications include substantial professional or academic experience in advanced topology, covering topics such as homeomorphisms, connectedness, compactness, metric spaces, normal spaces, separation axioms, product topology, Hilbert space, quotient space, paracompactness, nets, filters, and an introduction to homotopy theory. Demonstrated expertise through research, publications, conference presentations, or teaching experience in topology or closely related fields will also be considered.
MATH 4320 Topology II	Earned Master's or Doctorate degree in Mathematics, Theoretical Mathematics, Topology in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Set Theory, Geometric Topology, Algebraic Topology	Acceptable alternative qualifications include substantial professional or academic experience in advanced topology, covering topics such as homeomorphisms, connectedness, compactness, metric spaces, normal spaces, separation axioms, product topology, Hilbert space, quotient space, paracompactness, nets, filters, and an introduction to homotopy theory. Demonstrated expertise through research, publications, conference presentations, or teaching experience in topology or closely related fields will also be considered.
MATH 4410 Advanced Calculus I	Earned Master's or Doctorate degree in Mathematics, Theoretical Mathematics, Analysis in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Vector Calculus, Multivariable Calculus, Mathematical Analysis, Calculus Education	Acceptable alternative qualifications include substantial professional or academic experience in advanced calculus or real analysis, with familiarity in topics such as Euclidean n-space topology, sequences of real numbers, continuity of functions, Lebesgue integration, and measure theory. Demonstrated expertise through research, publications, conference presentations, or teaching experience in higher-level analysis will also be considered.
MATH 4420 Advanced Calculus II	Earned Master's or Doctorate degree in Mathematics, Theoretical Mathematics, Applied Mathematics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Vector Calculus, Multivariable Calculus, Mathematical Analysis, Calculus Education	Acceptable alternative qualifications include substantial professional or academic experience in continuity, uniform continuity, sequences and series of functions, differentiation, Riemann-Stieltjes integration, and differentiation in n-space. Demonstrated expertise through research, publications, conference presentations, or teaching experience in higher-level analysis will also be considered.
MATH 4500 Senior Project	Earned Master's or Doctorate degree in Mathematics, Applied Mathematics, Theoretical Mathematics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Mathematics Education	Acceptable alternative qualifications include substantial professional or academic experience in the broader field of mathematics, with a demonstrated ability to mentor students in independent inquiry and formal written presentation. This may include supervising advanced undergraduate research, guiding students through comprehensive mathematics projects, and producing notable scholarly work such as peer-reviewed articles or conference presentations in mathematics or mathematics education.
MATH 4530 Complex Analysis I	Earned Master's or Doctorate degree in Mathematics, Theoretical Mathematics, Complex Analysis in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Complex Variables, Mathematical Analysis	Acceptable alternative qualifications include substantial professional or academic experience in complex analysis, including deep knowledge of analytic functions, Cauchy's integral theorem, Taylor and Laurent series, singularities, residue theory, analytic continuation, conformal mapping, Riemann surfaces, infinite products, and entire functions. Demonstrated expertise through research, publications, conference presentations, or teaching experience in higher-level analysis will also be considered.

MATH 4560 Differential Equations I	Earned Master's or Doctorate degree in Mathematics, Applied Mathematics, Engineering Mathematics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Ordinary Differential Equations, Applied Analysis, Mathematical Modeling	Acceptable alternative qualifications include substantial professional or academic experience in differential equations, including expertise in first- and second-order equations, the general theory of linear nth-order differential equations, constant coefficient systems, variation of parameters, infinite series solutions, singular and asymptotic solutions, Green's functions, stability analysis, special functions, and the Laplace transform. Demonstrated expertise through research, publications, conference presentations, or teaching experience in differential equations or related fields will also be considered.
MATH 4570 Differential Equations II	Earned Master's or Doctorate degree in Mathematics, Applied Mathematics, Engineering Mathematics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Advanced Differential Equations, Stability Analysis, Mathematical Modeling	Acceptable alternative qualifications include substantial professional or academic experience in differential equations, including advanced knowledge of first- and second-order equations, the general theory of linear nth-order differential equations, constant coefficient systems, variation of parameters, infinite series, singular solutions, asymptotic solutions, Green's functions, stability analysis, special functions, and the Laplace transform. Demonstrated expertise through research, publications, conference presentations, or teaching experience in differential equations or related fields will also be considered.
MATH 4640 Topics in Algebra	Earned Master's or Doctorate degree in Mathematics, Theoretical Mathematics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Abstract Algebra, Commutative Algebra, Algebraic Geometry, Number Theory	Acceptable alternative qualifications include substantial professional or academic experience in advanced algebra topics, including but not limited to Commutative Algebra, Algebraic Geometry, Groebner Bases, and Algebra Number Theory. Demonstrated expertise through research, publications, conference presentations, or teaching experience in advanced algebra or related fields will also be considered.
MATH 4650 Modern Algebra II	Earned Master's or Doctorate degree in Mathematics, Theoretical Mathematics, Abstract Algebra in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Algebraic Structures, Galois Theory	Acceptable alternative qualifications include substantial professional or academic experience in modern algebra topics, including equivalence relations, mappings, groups, rings, fields, polynomial rings, modules, vector spaces, and Galois theory. Demonstrated expertise through research, publications, conference presentations, or extensive teaching experience in advanced algebra will also be considered.
MATH 4724 Student Teaching of Mathematics in the Secondary Schools	Earned Master's or Doctorate degree in Mathematics Education, Curriculum & Instruction in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Secondary Mathematics Education, Pedagogy, Educational Leadership	Acceptable alternative qualifications include substantial professional experience in teaching or supervising practice teaching in secondary schools, including expertise in curriculum design, instructional strategies, and classroom management. Demonstrated expertise through mentoring, publications, or conference presentations on effective mathematics teaching practices will also be considered.
MATH 4750 History of Mathematics	Earned Master's or Doctorate degree in Mathematics, History of Mathematics, Mathematics Education in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Mathematical Philosophy, Theoretical Mathematics	Acceptable alternative qualifications include substantial professional or academic experience in the history of mathematics, including research, publications, or conference presentations on the origin and development of mathematical ideas. Demonstrated expertise in integrating historical perspectives into mathematics instruction or curriculum design will also be considered.

MATH 4900 Special Topics	Earned Master's or Doctorate degree in Mathematics, Applied Mathematics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Specialized Mathematics Topics, Theoretical Mathematics	Acceptable alternative qualifications include substantial professional or academic experience in the specific mathematical topics addressed by the course, demonstrated through research, publications, conference presentations, or extensive teaching experience in the relevant area.
MATH 1529 Workshop for Introductory Probability and Statistics	Earned Master's or Doctorate degree in Mathematics, Applied Mathematics, Statistics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Probability Theory, Data Science, Quantitative Analysis	Acceptable alternative qualifications include substantial professional or academic experience in probability and statistics, particularly in areas such as data analysis, statistical modeling, and inferential statistics. Experience in research or teaching involving statistical software, real-world data applications, or applied probability in various fields such as business, healthcare, or engineering will also be considered. Additional qualifications such as peer-reviewed publications, conference presentations, or professional certifications in statistics, data science, or actuarial science will further support alternative credentialing.
MATH 1530 Introductory Probability and Statistics	Earned Master's or Doctorate degree in Statistics, Mathematics, Data Analytics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Probability, Quantitative Methods, Applied Statistics	Acceptable alternative qualifications include substantial professional experience in teaching or applying non-calculus-based probability and statistics. This may involve expertise in sampling methods, data handling, counting techniques, measures of central tendency, variation, hypothesis testing, linear regression, and ANOVA. Relevant professional certifications, licenses, or notable scholarly work (e.g., peer-reviewed articles or conference presentations in statistics or mathematics education) will also be considered.
MATH 2600 Introduction to Advanced Mathematics	Earned Master's or Doctorate degree in Mathematics, Applied Mathematics, Theoretical Mathematics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Abstract Algebra, Real Analysis, Topology, Mathematical Logic	Acceptable alternative qualifications include substantial professional experience in advanced mathematical concepts, particularly in areas such as set theory, proof methods, real analysis, and algebraic structures. Demonstrated expertise in transitioning students from calculus to abstract mathematics through research, publications, or teaching experience is also valuable. Relevant professional certifications, licenses, or notable scholarly work (e.g., peer-reviewed articles or conference presentations in higher-level mathematics or mathematics education) will be considered.
MATH 3650 Modern Algebra II	Earned Master's or Doctorate degree in Mathematics, Applied Mathematics, Galois Theory in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Abstract Algebra, Advanced Algebraic Structures, Theoretical Mathematics	Acceptable alternative qualifications include substantial professional or academic experience in modern algebra, encompassing rings, polynomial rings, factorization of polynomials, vector spaces, extension fields, algebraic extensions, Galois Theory, and modules. Demonstrated expertise through research publications, teaching experience, or conference presentations on these topics will also be considered.
MATH 2900 Special Topics	Earned Master's or Doctorate degree in Mathematics, Applied Mathematics, Theoretical Mathematics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Abstract Mathematics, Statistics	Acceptable alternative qualifications include substantial professional or academic experience in the specific area of mathematics addressed by the special topic. This might involve research, teaching, or publications related to the chosen topic of study. Relevant professional certifications, licenses, or notable scholarly work (e.g., peer-reviewed articles or conference presentations in mathematics or a closely related field) will also be considered.

MATH 3900 Special Topics	Earned Master's or Doctorate degree in Mathematics, Applied Mathematics, Theoretical Mathematics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Abstract Mathematics, Statistics	Acceptable alternative qualifications include substantial professional or academic experience in the specific area of mathematics addressed by the special topic. This might involve research, teaching, or publications related to the chosen topic of study. Relevant professional certifications, licenses, or notable scholarly work (e.g., peer-reviewed articles or conference presentations in mathematics or a closely related field) will also be considered.
MATH 3200 Combinatorics	Earned Master's or Doctorate degree in Mathematics, Applied Mathematics, Discrete Mathematics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Graph Theory, Advanced Algebraic Structures	Acceptable alternative qualifications include substantial professional or academic experience in combinatorial techniques, including permutations, combinations, generating functions, recurrence relations, and graph theory. Demonstrated expertise in mathematical proofs and problem-solving within combinatorics, such as through publications or conference presentations, will also be considered.
MATH 3100 Probability and Statistics	Earned Master's or Doctorate degree in Mathematics, Applied Mathematics, Statistics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Probability Theory, Statistical Analysis, Data Analytics	Acceptable alternative qualifications include substantial professional or academic experience in probability and statistics, such as designing experiments, collecting and analyzing data, and applying statistical methods in research or industry settings. Demonstrated expertise through peer-reviewed publications, conference presentations, or professional certifications (e.g., Statistical Analysis System (SAS) certification) will also be considered.
PHYS 1030 Conceptual Physics	Earned Master's or Doctorate degree in Physics or Applied Physics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Conceptual Physics, Interdisciplinary Studies	Acceptable alternative qualifications include substantial professional experience in teaching conceptual physics to non-science majors, with demonstrated expertise in integrating physics principles with the arts (such as music, dance, and communications). Experience designing and supervising lab activities that utilize scientific instrumentation to explore physical phenomena, along with relevant professional certifications, licenses, or notable scholarly work in physics education or interdisciplinary applications of physics, will also be considered.
MATH 1900 Special Topics	Earned Master's or Doctorate degree in Mathematics, Applied Mathematics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Statistics, Data Science, Mathematical Modeling	Acceptable alternative qualifications include significant professional or academic experience relevant to the specific topic being taught in the course. This may include applied research, teaching specialized mathematical content, or development of mathematics curriculum aligned with the special topic. Publication or professional engagement in the designated area may also be considered.
PHYS 1032 Conceptual Physics Laboratory	Earned Master's or Doctorate degree in Physics or Applied Physics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Applied Physics, Experimental Physics, Physical Science Education	Acceptable alternative qualifications include significant laboratory teaching experience in conceptual or general physics, hands-on instructional experience in physical science education, or professional work involving experimental physics, instrumentation, or laboratory safety. Experience designing or supervising laboratory exercises and activities for undergraduate students may also be considered.

PHYS 2010 College Physics I	Earned Master's or Doctorate degree in Physics or Applied Physics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Applied Physics, Experimental Physics, Physical Science Education	Acceptable alternative qualifications include substantial professional or academic experience in non-calculus-based physics, specifically in mechanics and sound. Experience teaching physics to students in biology, pre-medicine, and allied health professions is valuable. Demonstrated expertise in designing physics laboratory experiments related to mechanics and acoustics, developing physics curricula tailored to life sciences, and integrating real-world applications of physics in biological and medical contexts will be considered. Additional qualifications such as peer-reviewed publications, conference presentations, or professional certifications in physics education, biomedical physics, or acoustics will also support alternative credentialing.
PHYS 2011 College Physics I Laboratory	Earned Master's or Doctorate degree in Physics or Applied Physics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Experimental Physics, Mechanics, Acoustics, Physics Education	Acceptable alternative qualifications include substantial professional or academic experience in conducting and supervising physics laboratory courses, particularly in mechanics and acoustics. Experience in designing and implementing physics experiments, using scientific instrumentation for data collection and analysis, and teaching physics to students in biology, pre-medicine, and allied health professions is valuable. Demonstrated expertise through publications, conference presentations, or certifications in laboratory instruction, physics education, or experimental physics will also be considered.
PHYS 2020 College Physics II	Earned Master's or Doctorate degree in Physics or Applied Physics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Thermodynamics, Optics, Electromagnetism, Modern Physics	Acceptable alternative qualifications include substantial professional or academic experience in non-calculus-based physics, particularly in heat, light, electricity, magnetism, and modern physics. Experience teaching physics to students in biology, pre-medicine, and allied health professions is valuable. Demonstrated expertise in designing physics laboratory experiments related to thermodynamics, optics, and electromagnetism, as well as integrating real-world applications of physics in life sciences, will be considered. Additional qualifications such as peer-reviewed publications, conference presentations, or professional certifications in physics education, optics, or electromagnetism will also support alternative credentialing.
PHYS 2021 College Physics II Laboratory	Earned Master's or Doctorate degree in Physics or Applied Physics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Thermodynamics, Optics, Electromagnetism, Modern Physics	Acceptable alternative qualifications include substantial professional or academic experience in non-calculus-based physics, particularly in heat, light, electricity, magnetism, and modern physics. Experience teaching physics to students in biology, pre-medicine, and allied health professions is valuable. Demonstrated expertise in designing physics laboratory experiments related to thermodynamics, optics, and electromagnetism, as well as integrating real-world applications of physics in life sciences, will be considered. Additional qualifications such as peer-reviewed publications, conference presentations, or professional certifications in physics education, optics, or electromagnetism will also support alternative credentialing.

PHYS 2110 Calculus Based Physics I	Earned Master's or Doctorate degree in Physics Applied Physics or Engineering Physics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Classical Mechanics, Applied Mathematics	Acceptable alternative qualifications include substantial professional or academic experience in teaching calculus-based physics, particularly in mechanics, energy, momentum, rotational dynamics, gravitation, fluid mechanics, periodic motion, and sound. Experience in integrating calculus concepts into physics instruction, conducting physics experiments related to these topics, and applying these principles in engineering or physical sciences will be considered. Additional qualifications such as peer-reviewed publications, conference presentations, or professional certifications in physics education or applied physics will also support alternative credentialing.
PHYS 2111 Calculus Based Physics I Laboratory	Earned Master's or Doctorate degree in Physics Applied Physics or Engineering Physics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Classical Mechanics, Applied Mathematics	Acceptable alternative qualifications include substantial professional or academic experience in teaching calculus-based physics, particularly in mechanics, energy, momentum, rotational dynamics, gravitation, fluid mechanics, periodic motion, and sound. Experience in integrating calculus concepts into physics instruction, conducting physics experiments related to these topics, and applying these principles in engineering or physical sciences will be considered. Additional qualifications such as peer-reviewed publications, conference presentations, or professional certifications in physics education or applied physics will also support alternative credentialing.
PHYS 2120 Calculus Based Physics II	Earned Master's or Doctorate degree in Physics, Applied Physics or Engineering Physics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Electromagnetism, Thermodynamics, Optics	Acceptable alternative qualifications include substantial professional or academic experience in teaching calculus-based physics, particularly in heat, electricity, magnetism, and optics. Experience in integrating calculus concepts into physics instruction, designing and conducting physics experiments in these areas, and applying these principles in engineering or physical sciences will be considered. Additional qualifications such as peer-reviewed publications, conference presentations, or professional certifications in physics education, optics, or electromagnetism will also support alternative credentialing.
PHYS 2121 Calculus Based Physics II Laboratory	Earned Master's or Doctorate degree in Physics, Applied Physics or Engineering Physics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Electromagnetism, Thermodynamics, Optics	Acceptable alternative qualifications include substantial professional or academic experience in teaching calculus-based physics, particularly in heat, electricity, magnetism, and optics. Experience in integrating calculus concepts into physics instruction, designing and conducting physics experiments in these areas, and applying these principles in engineering or physical sciences will be considered. Additional qualifications such as peer-reviewed publications, conference presentations, or professional certifications in physics education, optics, or electromagnetism will also support alternative credentialing.

PHYS 3110, 3120 Electricity and Magnetism I, II	Earned Master's or Doctorate degree in Physics, Applied Physics, Electromagnetic Theory in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Classical Electrodynamics	Acceptable alternative qualifications include substantial professional or academic experience in electricity and magnetism, particularly in solving theoretical problems using vector calculus in three dimensions. Experience in advanced electromagnetic theory, applications in engineering physics, computational electromagnetics, or related experimental research will also be considered. Additional qualifications such as peer-reviewed publications, conference presentations, or professional certifications in physics education or electromagnetic analysis will further support alternative credentialing.
PHYS 3140 Optics	Earned Master's or Doctorate degree in Physics or Applied Physics, Optical Science in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Photonics, Electromagnetic Theory	Acceptable alternative qualifications include substantial professional or academic experience in geometrical and physical optics, including spectroscopy. Experience in designing and conducting optics experiments, research in photonics, computational optics, or applied optics in engineering and scientific applications will also be considered. Additional qualifications such as peer-reviewed publications, conference presentations, or professional certifications in optical science, laser physics, or spectroscopy will further support alternative credentialing.
PHYS 3200 Heat and Thermodynamics	Earned Master's or Doctorate degree in Physics or Applied Physics, Thermodynamics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Thermal Physics, Statistical Mechanics, Physical Chemistry	Acceptable alternative qualifications include substantial professional or academic experience in heat transfer, thermodynamics, and their applications to chemistry. Experience in research or teaching involving statistical mechanics, phase transitions, and energy systems, as well as laboratory experience with thermodynamic measurements and heat transfer analysis, will also be considered. Additional qualifications such as peer-reviewed publications, conference presentations, or professional certifications in thermodynamics, energy systems, or chemical physics will further support alternative credentialing.
PHYS 3210, 3220 Mechanics I, II	Earned Master's or Doctorate degree in Physics or Applied Physics, Mechanical Physics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Classical Mechanics, Theoretical Physics, Engineering Mechanics	Acceptable alternative qualifications include substantial professional or academic experience in classical mechanics, specifically in statics and dynamics of particles and rigid bodies, Lagrange's and Hamilton's equations, fluid statics, and vibrations. Experience in research or teaching involving advanced mechanics, analytical dynamics, or computational physics will also be considered. Additional qualifications such as peer-reviewed publications, conference presentations, or professional certifications in applied mechanics, theoretical physics, or engineering dynamics will further support alternative credentialing.

PHYS 3411, 3421 Advanced Physics Laboratory I, II	Earned Master's or Doctorate degree in Physics, Applied Physics, or Experimental Physics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Modern Physics	Acceptable alternative qualifications include substantial professional or academic experience in conducting and supervising advanced physics laboratory courses, with expertise in experimental techniques related to mechanics, heat, sound, light, and modern physics. Experience in designing and implementing laboratory experiments, data acquisition and analysis, and familiarity with scientific instrumentation will also be considered. Additional qualifications such as peer-reviewed publications, conference presentations, or professional certifications in physics education, laboratory management, or experimental research will further support alternative credentialing.
PHYS 3610 Advanced Problem Solving in Physics	Earned Master's or Doctorate degree in Physics, Applied Physics, or Mathematical Physics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Theoretical Physics, Computational Physics	Acceptable alternative qualifications include substantial professional or academic experience in applying mathematical methods to solve physics problems, particularly in areas such as matrix algebra, complex variables, special analytical functions, and differential equations. Experience in research or teaching involving problem-solving techniques, mathematical modeling, and advanced physics computations will also be considered. Additional qualifications such as peer-reviewed publications, conference presentations, or professional certifications in applied mathematics, computational physics, or theoretical physics will further support alternative credentialing.
PHYS 4100, 4110 Introduction to Quantum Mechanics I, II	Earned Master's or Doctorate degree in Physics, Applied Physics or Quantum Mechanics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Theoretical Physics, Atomic and Molecular Physics	Acceptable alternative qualifications include substantial professional or academic experience in quantum mechanics, particularly in fundamental principles, computational methods, and applications to atomic, molecular, and nuclear physics. Experience in research or teaching involving quantum theory, wave functions, Schrödinger's equation, operator methods, and quantum statistics will also be considered. Additional qualifications such as peer-reviewed publications, conference presentations, or professional certifications in quantum mechanics, computational physics, or theoretical physics will further support alternative credentialing.
PHYS 4120, 4130 Modern Physics I, II	Earned Master's or Doctorate degree in Physics, Applied Physic, or Modern Physics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Atomic and Molecular Physics, Nuclear Physics, Radiation Physics	Acceptable alternative qualifications include substantial professional or academic experience in modern physics, particularly in atomic and molecular structure, the chemical bond, nuclear physics, fission, isotopic tracers, medical radiology, and cosmic rays. Experience in research or teaching involving quantum mechanics, spectroscopy, radiation physics, and applications of nuclear physics in medical or industrial settings will also be considered. Additional qualifications such as peer-reviewed publications, conference presentations, or professional certifications in nuclear physics, radiation science, or quantum mechanics will further support alternative credentialing.

PHYS 4500 Senior Project	Earned Master's or Doctorate degree in Physics or Applied Physics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Theoretical Physics, Experimental Physics, Research Methodology	Acceptable alternative qualifications include substantial professional or academic experience in supervising student research projects in physics. Experience in mentoring students in independent study, research methodologies, technical writing, and scientific presentations is valuable. Demonstrated expertise through peer-reviewed publications, conference presentations, or research experience in a specialized area of physics will also be considered.
PHYS 4600 Undergraduate Readings and Research	Earned Master's or Doctorate degree in Physics or Applied Physics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Theoretical Physics, Experimental Physics, Research Methodology	Acceptable alternative qualifications include substantial professional or academic experience in supervising undergraduate research in physics. Experience in guiding students through independent study, literature review, experimental design, data analysis, and scientific writing is valuable. Demonstrated expertise through peer-reviewed publications, conference presentations, or mentorship in physics research will also be considered.
PHYS 4900 Special Topics in Physics	Earned Master's or Doctorate degree in Physics or Applied Physics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Theoretical Physics, Experimental Physics	Acceptable alternative qualifications include substantial professional or academic experience in specialized areas of physics relevant to the topics covered in the course. Experience in advanced research, experimental design, interdisciplinary applications of physics, or emerging fields such as quantum computing, nanotechnology, or astrophysics will also be considered. Demonstrated expertise through peer-reviewed publications, conference presentations, or professional certifications in specialized physics topics will further support alternative credentialing.
PHYS 4905 Advanced Laboratory Studies	Earned Master's or Doctorate degree in Physics or Applied Physics, Experimental Physics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Instrumentation, Theoretical Physics	Acceptable alternative qualifications include substantial professional or academic experience in conducting and supervising advanced physics laboratory courses. Expertise in designing and executing complex physics experiments, data acquisition and analysis, and working with advanced scientific instrumentation is valuable. Experience in research areas such as optics, condensed matter physics, nuclear physics, or quantum mechanics, along with peer-reviewed publications, conference presentations, or professional certifications in laboratory physics or instrumentation, will also be considered.
PHYS 4906 Analytical Mechanics	Earned Master's or Doctorate degree in Physics, Applied Physics, or Engineering Mechanics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Classical Mechanics, Theoretical Physics, Computational Physics	Acceptable alternative qualifications include substantial professional or academic experience in analytical mechanics, particularly in areas such as Lagrangian and Hamiltonian mechanics, rigid body dynamics, variational principles, and advanced problem-solving techniques in physics. Experience in research or teaching involving computational modeling, mathematical physics, or engineering applications of mechanics will also be considered. Additional qualifications such as peer-reviewed publications, conference presentations, or professional certifications in applied mechanics, theoretical physics, or computational physics will further support alternative credentialing.

PHYS 4907 Electricity and Magnetism	Earned Master's or Doctorate degree in Physics, Applied Physics, or Electromagnetic Theory in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Classical Electrodynamics, Classical Mechanics	Acceptable alternative qualifications include substantial professional or academic experience in advanced electricity and magnetism. This may involve expertise in topics such as Maxwell's equations, electromagnetic wave propagation, field theory, and applications in electrical engineering or related fields. Demonstrated proficiency through research, publications, conference presentations, or extensive teaching experience in electromagnetism will also be considered.
PHYS 4908 Modern Physics	Earned Master's or Doctorate degree in Physics or Applied Physics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Quantum Mechanics, Atomic and Molecular Physics, Nuclear Physics, Modern Physic	Acceptable alternative qualifications include substantial professional or academic experience in modern physics, including expertise in quantum mechanics, atomic and molecular structure, relativity, nuclear physics, and particle physics. Experience in research or teaching involving fundamental principles of modern physics, laboratory experimentation in contemporary physics topics, or applications in high-energy physics will also be considered. Additional qualifications such as peer-reviewed publications, conference presentations, or professional certifications in quantum physics, radiation physics, or theoretical physics will further support alternative credentialing.
PHYS 4909 Optics	Earned Master's or Doctorate degree in Physics or Applied Physics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Photonics, Electromagnetic Theory, Optical Science	Acceptable alternative qualifications include substantial professional or academic experience in optics, including expertise in geometrical and physical optics, laser physics, wave optics, and spectroscopy. Experience in research or teaching involving optical instrumentation, experimental optics, fiber optics, and photonics applications will also be considered. Additional qualifications such as peer-reviewed publications, conference presentations, or professional certifications in optical science, laser technology, or electromagnetic theory will further support alternative credentialing.
PHYS 4910 Quantum Mechanics	Earned Master's or Doctorate degree in Physics Applied Physics, or Quantum Mechanics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Theoretical Physics, Atomic and Molecular Physics, Quantum Computing	Acceptable alternative qualifications include substantial professional or academic experience in quantum mechanics, including expertise in wave functions, Schrödinger's equation, quantum states, operator methods, and quantum statistics. Experience in research or teaching involving applications of quantum theory in atomic and molecular physics, condensed matter physics, or quantum information science will also be considered. Additional qualifications such as peer-reviewed publications, conference presentations, or professional certifications in quantum physics, computational quantum mechanics, or quantum information science will further support alternative credentialing.
PHYS 4911 Research Project	Earned Master's or Doctorate degree in Physics or Applied Physics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Experimental Physics, Theoretical Physics, Computational Physics	Acceptable alternative qualifications include substantial professional or academic experience in supervising student research projects in physics. Experience in mentoring students in independent study, research methodologies, technical writing, and scientific presentations is valuable. Demonstrated expertise through peer-reviewed publications, conference presentations, or research experience in a specialized area of physics will also be considered.

PHYS 4912 Solid State Physics	Earned Master's or Doctorate degree in Physics or Applied Physics, Condensed Matter Physics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Materials Science, Semiconductor Physics	Acceptable alternative qualifications include substantial professional or academic experience in solid state physics, including expertise in crystal structures, band theory, semiconductors, superconductivity, and electronic properties of materials. Experience in research or teaching involving applications of condensed matter physics in nanotechnology, materials science, or electronic device physics will also be considered. Additional qualifications such as peer-reviewed publications, conference presentations, or professional certifications in condensed matter physics, materials engineering, or semiconductor physics will further support alternative credentialing.
PHYS 4913 Thermodynamics and Statistical Mechanics	Earned Master's or Doctorate degree in Physics or Applied Physics, Statistical Mechanics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Thermal Physics, Condensed Matter Physics	Acceptable alternative qualifications include substantial professional or academic experience in thermodynamics and statistical mechanics, including expertise in laws of thermodynamics, entropy, phase transitions, probability distributions, and partition functions. Experience in research or teaching involving applications in condensed matter physics, chemical thermodynamics, or computational statistical mechanics will also be considered. Additional qualifications such as peer-reviewed publications, conference presentations, or professional certifications in thermodynamics, statistical physics, or related fields will further support alternative credentialing.
MATH 4200 Introduction to Graph Theory	Earned Master's or Doctorate degree in Mathematics, Applied Mathematics, Discrete Mathematics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Combinatorics, Theoretical Computer Science	Acceptable alternative qualifications include substantial professional or academic experience in graph theory, including topics such as trees, connectivity, graph coloring, network flows, and Eulerian and Hamiltonian paths. Experience in research or teaching involving applications of graph theory in computer science, optimization, and network analysis will also be considered. Additional qualifications such as peer-reviewed publications, conference presentations, or professional certifications in discrete mathematics, combinatorial optimization, or algorithm design will further support alternative credentialing.
MATH 4300 Point-Set Topology	Earned Master's or Doctorate degree in Mathematics, Applied Mathematics, Topology in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Pure Mathematics, Geometric Topology, Analysis	Acceptable alternative qualifications include substantial professional or academic experience in topology, particularly in point-set topology concepts such as open and closed sets, continuity, compactness, connectedness, metric spaces, and separation axioms. Experience in research or teaching involving applications of topology in analysis, algebraic topology, and related fields will also be considered. Additional qualifications such as peer-reviewed publications, conference presentations, or professional certifications in mathematical topology or geometric analysis will further support alternative credentialing.

PHYS 3010 Introduction to Modern Physics	Earned Master's or Doctorate degree in Physics or Applied Physics, Modern Physics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Quantum Mechanics, Atomic and Molecular Physics, Nuclear Physics	Acceptable alternative qualifications include substantial professional or academic experience in modern physics, particularly in topics such as special relativity, quantum mechanics, atomic and molecular structure, and nuclear physics. Experience in research or teaching involving applications of modern physics in condensed matter physics, semiconductor physics, or astrophysics will also be considered. Additional qualifications such as peer-reviewed publications, conference presentations, or professional certifications in quantum mechanics, radiation physics, or computational physics will further support alternative credentialing.
PHYS 3511 Physics Electronics Laboratory	Earned Master's or Doctorate degree in Physics or Applied Physics, Electrical Engineering in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Electronics, Experimental Physics, Instrumentation	Acceptable alternative qualifications include substantial professional or academic experience in electronics and experimental physics, particularly in circuit design, semiconductor devices, signal processing, and instrumentation. Experience in research or teaching involving practical applications of electronics in physics experiments, embedded systems, or instrumentation design will also be considered. Additional qualifications such as peer-reviewed publications, conference presentations, or professional certifications in electronics, circuit design, or applied physics will further support alternative credentialing.