



Kansas Board of Regents
Precollege Curriculum Courses Approved for University Admissions

Original Publication
April 6, 2011

Revision Dates
June 13, 2011
May 23, 2012
March 11, 2014

Kansas Board of Regents Precollege Curriculum Courses Proposed for University Admissions
Adopted April 6, 2011

The precollege curriculum is designed to prepare high school students for university-level work. The list of courses fulfilling the precollege curriculum has been recommended by the Kansas State Department of Education and approved by the chief executive officer of the board of regents or the chief executive officer's designee. Requirements for the precollege curriculum are found in K.A.R. 88-29-11 and 88-29a-11.

ELECTIVE Course Title	Course Code	Course Description
Literature—Independent Study	01097	Courses in Literature—Independent Study, often conducted with instructors as mentors, enable students to explore topics of interest related to literature. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular application, to explore a topic in greater detail, or to develop more advanced skills.
Creative Writing	01104	Creative Writing courses offer students the opportunity to develop and improve their technique and individual style in poetry, short story, drama, essays, and other forms of prose. The emphasis of the courses is on writing; however, students may study exemplary representations and authors to obtain a fuller appreciation of the form and craft. Although most creative writing classes cover several expressive forms, others concentrate exclusively on one particular form (such as poetry or playwriting).
Research/Technical Writing	01105	Research/Technical Writing classes prepare students to write research papers and/or technical reports. These classes emphasize researching (primary and secondary sources), organizing (material, thoughts, and arguments), and writing in a persuasive or technical style.
Composition—Independent Study	01147	Composition—Independent study, often conducted with instructors as mentors, allow students to explore particular topics within the field of language arts (emphasizing composition). Independent Study courses may serve as an opportunity for students to expand their expertise in a particular application, to explore a topic in greater detail, or to develop more advanced skills.

Forensic Speech—Inclusive	01152	Forensic Speech—Inclusive courses offer students the opportunity to learn how to use oral skills effectively in formal and informal situations. Students learn such skills as logic and reasoning, the organization of thought and supporting materials, and effective presentation of one’s voice and body. Often linked to an extracurricular program, these courses introduce students to numerous public speaking situations, and they learn the methods, aims, and styles of a variety of events (e.g., formal debate, Lincoln-Douglas debate, expository speaking, radio broadcast, oral interpretation, and dramatic interpretation). Participation in competition is encouraged, but not always required.
Forensic Speech—Debate	01153	Forensic Speech—Debate courses offer students the opportunity to learn how to use oral skills in formal and informal situations. In these courses, students are able to develop such skills as logic and reasoning, research and analysis, organization of thought and supporting materials, argumentative style and skill, and effective presentation of one’s voice and body. Often linked to an extracurricular program, these courses introduce students to the methods, aims, and styles used in various kinds of debates (formal debate or Lincoln-Douglas). Participation in competition is encouraged, but not always required.
Forensic Speech—Individual Event	01154	Forensic Speech—Individual Event courses offer students the opportunity to learn how to use oral skills in formal and informal situations. Topics included depend upon the event(s) being taught, but they usually emphasize effective presentation of one’s voice and body, thoughtful understanding and interpretation of literature, logic and reasoning, and the organization of thought and supporting materials. Often linked to an extracurricular program, these courses introduce students to one or several individual event categories (e.g., exposition, oral interpretation, dramatic interpretation, and radio broadcast). Participation in competition is encouraged, but not always required.

Communications	01155	Communications courses focus on the application of written and oral communication skills through a variety of formal and informal experiences. The courses are performance-based and emphasize effective interpersonal and team-building skills. Communications courses may also involve the study of how interpersonal communications are affected by stereotypes, nonverbal cues, vocabulary, and stylistic choices.
Applied English and Communications	01156	Applied English and Communications courses teach students communication skills—reading, writing, listening, speaking—concentrating on “real-world” applications. These courses usually emphasize the practical application of communication as a business tool—using technical reports and manuals, business letters, resumes, and applications as examples—rather than emphasize language arts skills as applied to scholarly and literary materials.
Speech—Independent Study	01197	English Language and Literature—Independent study courses, often conducted with instructors as mentors, allow students to explore particular topics within the field of language arts (emphasizing speech). Independent Study courses may serve as an opportunity for students to expand their expertise in a particular application, to explore a topic in greater detail, or to develop more advanced skills.
English Morphology and Grammar	01201	English Morphology and Grammar courses involve the study of the English language—its roots and derivations, structure and sentence patterns, dialects, writing and spelling systems, and uses as a communication tool.
History of the English Language	01202	History of the English Language courses trace the development of English, concentrating on historical and cultural influences and how the language has changed over time. Although language roots, structures, and dialects may be examined, the emphasis remains on the process of language development rather than on morphology.

History of the English Language	01202	History of the English Language courses trace the development of English, concentrating on historical and cultural influences and how the language has changed over time. Although language roots, structures, and dialects may be examined, the emphasis remains on the process of language development rather than on morphology.
English Language and Literature—Independent Study	01997	English Language and Literature—Independent study courses, often conducted with instructors as mentors, allow students to explore particular topics within the field of language arts. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular application, to explore a topic in greater detail, or to develop more advanced skills.
Transition Algebra	02055	Transition Algebra courses review and extend algebra and geometry concepts for students who have already taken Algebra I and Geometry. Transition Algebra courses include a review of such topics as properties and operations of real numbers; evaluation of rational algebraic expressions; solutions and graphs of first degree equations and inequalities; translation of word problems into equations; operations with and factoring of polynomials; simple quadratics; properties of plane and solid figures; rules of congruence and similarity; coordinate geometry including lines, segments, and circles in the coordinate plane; and angle measurement in triangles including trigonometric ratios.
Principles of Algebra and Geometry	02074	Principles of Algebra and Geometry courses combine the study of some pre-algebra and algebra topics with introductory geometry topics. These courses include the study of formulas, algebraic expressions, first degree equations and inequalities, the rectangular coordinate system, area, perimeter, and volume of geometric figures, and properties of triangles and circles.

Technical Math	02153	Technical Math courses extend students' proficiency in mathematics, and often apply these skills to technical and/or industrial situations and problems. Technical Math topics may include but are not limited to rational numbers, systems of measurements, tolerances, numerical languages, geometry, algebra, statistics, and using tables, graphs, charts, and other data displays. Technology is integrated as appropriate.
History of Math	02991	History of Math courses include a study of the historical development of numbers, computation, algebra, and geometry. Figures critical to the development of mathematics (e.g., Pythagoras, Pascal, Descartes) or important developments (e.g., pi, decimal fractions, probability theory, calculus) often form the backbone of these classes.
Mathematics—Independent Study	02997	Mathematics—Independent Study courses, often conducted with instructors as mentors, enable students to explore topics of interest related to mathematics. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular application, to explore a topic in greater detail, or to develop more advanced skills.
Physical Geography	03007	Physical Geography courses equip students with an understanding of the constraints and possibilities that the physical environment places on human development. These courses include discussion of the physical landscape through geomorphology and topography, the patterns and processes of climate and weather, and natural resources.
Particular Topics in Earth Science	03009	Particular Topics in Earth Science courses concentrate on a particular subtopic within the field of earth science (such as mineralogy) that is not otherwise described within this classification system.
Earth Science—Independent Study	03047	Earth Science—Independent Study courses, often conducted with instructors as mentors, enable students to explore scientific topics of interest, using advanced methods of scientific inquiry and experimentation. These courses may be offered in conjunction with other science courses or may serve as an opportunity to explore a topic of special interest.

Conceptual Biology	03062	These courses provide students with a basic understanding of living things. Topics covered may include ecology and environmental problems such as overpopulation and pollution as well as cells, types of organisms, evolutionary behavior, and inheritance.
Particular Topics in Biology	03063	Particular Topics in Biology courses concentrate on a particular subtopic within the field of biology (such as botany, zoology, genetics, and so on) that is not otherwise described within this classification system.
Biology—Independent Study	03097	Biology—Independent Study courses, often conducted with instructors as mentors, enable students to explore scientific topics of interest, using advanced methods of scientific inquiry and experimentation. These courses may be offered in conjunction with other science courses or may serve as an opportunity for students to explore a topic of special interest.
Conceptual Chemistry	03105	Conceptual Chemistry courses are practical, nonquantitative chemistry courses designed for students who desire an understanding of chemical concepts and applications.
Particular Topics in Chemistry	03108	Particular Topics in Chemistry courses concentrate on a particular subtopic within the field of chemistry (such as chromatography and spectrometry) that is not otherwise described in this classification system.
Chemistry—Independent Study	03147	Chemistry—Independent Study courses, often conducted with instructors as mentors, enable students to explore scientific topics of interest, using advanced methods of scientific inquiry and experimentation. These courses may be offered in conjunction with other rigorous science courses or may serve as an opportunity to explore a topic of special interest.
Conceptual Physics	03161	Conceptual Physics courses introduce students to the use of chemicals, characteristic properties of materials, and simple mechanics to better describe the world and nonliving matter. The courses emphasize precise measurements and descriptive analysis of experimental results. Topics covered may include energy and motion, electricity, magnetism, heat, the structure of matter, and how matter reacts to materials and forces.

Particular Topics in Physics	03162	Particular Topics in Physics courses concentrate on a particular subtopic within the field of physics (such as optics, thermodynamics, quantum physics, and so on) that is not otherwise described in this classification system.
Physics—Independent Study	03197	Physics—Independent Study courses, often conducted with instructors as mentors, enable students to explore scientific topics of interest, using advanced methods of scientific inquiry and experimentation. These courses may be offered in conjunction with other rigorous science courses or may provide students with an opportunity to explore a topic of special interest.
Unified Science	03202	Unified Science courses combine more than one branch of science into a cohesive study or may integrate science with another discipline. General scientific concepts are explored, as are the principles underlying the scientific method and experimentation techniques.
Applied Biology/Chemistry	03203	Applied Biology/Chemistry courses integrate biology and chemistry into a unified domain of study and present the resulting body of knowledge in the context of work, home, society, and the environment, emphasizing field and laboratory activities. Topics include natural resources, water, air and other gases, nutrition, disease and wellness, plant growth and reproduction, life processes, microorganisms, synthetic materials, waste and waste management, and the community of life.
Technological Inquiry	03204	Technological Inquiry courses provide students with an understanding of the use of process skills as an integral part of scientific activity and technological development. Students learn how scientific phenomena are explained, measured, predicted, organized, and communicated.
Origins of Science	03205	Origins of Science courses explore the body of scientific knowledge and discoveries from an historical perspective, wherein students gain an understanding of how one discovery led to others or to entire revolutions of thought. In these courses, original experiments may be replicated, and students may study primary materials.

Science, Technology and Society	03210	Science, Technology, and Society courses encourage students to explore and understand the ways in which science and technology shape culture, values, and institutions and how such factors, in turn, shape science and technology. Topics covered may include how science and technology enter society and how they change as a result of social processes.
Technical Science	03211	Technical Science courses introduce students to scientific tools and methods and provide an introduction to chemistry and physics. Topics covered typically include measurement conversion, model creation, use of scientific methods, interpretation of atoms, identification of the properties of common compounds, analysis of chemical equations, the impact of force on linear motion, and the study of various physical phenomena and forms of energy.
Life and Physical Sciences—Independent Study	03997	Life and Physical Sciences—Independent Study courses, often conducted with instructors as mentors, enable students to explore scientific topics of interest, using advanced methods of scientific inquiry and experimentation. These courses may be offered in conjunction with other rigorous science courses or may serve as an opportunity to explore a topic of special interest.
Geography—Independent Study	04047	Geography—Independent Study courses, often conducted with instructors as mentors, enable students to explore topics of interest within geography. Independent Study courses may provide students with an opportunity to expand their expertise in a particular specialization, to explore a topic of special interest, or to develop more advanced skills.
Particular Topics in World History	04065	These courses examine particular topics in world history other than those already described.
World History—Independent Study	04097	World History—Independent Study courses, often conducted with instructors as mentors, enable students to explore topics of interest within world history. Independent Study courses may provide students with an opportunity to expand their expertise in a particular period or area, to explore a topic of special interest, or to develop more advanced skills.

Particular Topics in U.S. History	04109	These courses examine a particular topic in U.S. History, such as particular time periods in the history of the United States, or they may focus on the history of particular U.S. regions rather than provide an overview of the subject.
U.S. History—Independent Study	04147	U.S. History—Independent Study courses, often conducted with instructors as mentors, enable students to explore topics of interest within U.S. History. Independent Study courses may provide students with an opportunity to expand their expertise in a particular period or area, to explore a topic in greater detail, or to develop more advanced skills.
Particular Topics in U.S. Government	04152	These courses examine a particular topic pertaining to U.S. government and political institutions rather than provide a general overview of the subject. They may concentrate on one of many topics related to governmental structure, function, and purposes, such as the Constitution, the Supreme Court, Congress, or the Office of the President.
Consumer Law	04163	Consumer Law courses present a history and philosophy of law and the legal system in the United States, with a particular emphasis on those topics affecting students as consumers and young adults (such as contractual laws, laws pertaining to housing and marriage, and constitutional rights).
Business Law	04164	Business Law courses present a history and philosophy of law and the legal system in the United States, with a particular emphasis on those topics affecting students as future business leaders and employees. Such topics may include contracts, commercial paper and debt instruments, property rights, employer/employee relationships, and constitutional rights and responsibilities.

Environmental Law	04170	Environmental Law courses present a history and philosophy of law and the legal system in the United States, with a particular emphasis on those topics affecting environmental issues, chemical usage, management, clean-up, disposal, and the exposure and legal responsibilities of workers engaged in associated occupations. Such topics may include contracts, property rights, employer/employee relationships, liability, and constitutional rights and responsibilities with particular attention paid to conversation and environmental issues.
Government, Politics and Law—Independent Study	04197	Government, Politics, and Law—Independent Study courses, often conducted with instructors as mentors, enable students to explore topics of interest within one of the fields of Government, Politics, and Law. These courses may provide students with an opportunity to expand their expertise in a particular specialization, to explore a topic of special interest, or to develop more advanced skills.
Particular Topics in Economics	04207	These courses examine a particular topic in Economics rather than provide a general overview of the field. Course topics may include international economics, economic development and growth of a particular country or region, or resource allocation.
Economics—Independent Study	04247	Economics—Independent Study courses, often conducted with instructors as mentors, enable students to explore topics of interest within the field of economics. Independent Study courses may provide students with an opportunity to expand their expertise in a particular specialization, to explore a topic of special interest, or to develop more advanced skills.
Social Science	04260	Social Science courses provide students with an introduction to the various disciplines in the social sciences, including anthropology, economics, geography, history, political science, psychology, and sociology. Typically, these courses emphasize the methodologies of the social sciences and the differences among the various disciplines.

IB Organization Studies	04262	<p>IB Organization Studies courses prepare students to take the International Baccalaureate Organization Studies exams at either the Subsidiary or Higher levels. These IB courses provide a broad introduction to the principles and practices of enterprises engaged in producing, distributing, and exchanging goods and services in a variety of economic frameworks. A sample of topics explored within these courses include management styles and structures; decision-making methods; and methods for accounting, planning, and communication.</p>
Social Science – Independent Study	04297	<p>Social Science—Independent Study courses, often conducted with instructors as mentors, enable students to explore topics of interest within the field of social sciences. Independent Study courses may provide students with an opportunity to expand their expertise in a particular specialization, to explore a topic of special interest, or to develop more advanced skills.</p>
IB Theory of Knowledge	04304	<p>Obligatory for every International Baccalaureate degree candidate, IB Theory of Knowledge courses aim to stimulate critical self-reflection of students' knowledge and experiences. Course content generates questions regarding the bases of knowledge and their verification in the disciplines of mathematics, natural sciences, human sciences, and history, with an awareness of moral, political, and aesthetic judgments and biases. Students learn to appreciate the strengths and limitations of various kinds of knowledge; to relate studied subjects to one another, general knowledge, and living experiences; to formulate rational arguments; and to evaluate the role of language in knowledge and as a way to convey knowledge.</p>
Social Studies	04305	<p>Social Studies courses enable students to study a group of related subjects addressing the elements and structures of human society that may include economics, geography, history, citizenship, and other social studies-related disciplines.</p>

Humanities—Independent Study	04347	Humanities—Independent Study courses, often conducted with instructors as mentors, enable students to explore topics of interest within the field of humanities. Independent Study courses may provide students with an opportunity to expand their expertise in a particular specialization, to explore a topic of special interest, or to develop more advanced skills.
Social Sciences and History—Independent Study	04997	Social Sciences and History—Independent Study courses, often conducted with instructors as mentors, enable students to explore topics of interest within one of the fields of social studies. These courses provide students with an opportunity to expand their expertise in a particular specialization, to explore a topic of special interest, or to develop more advanced skills.
Dance Technique	05001	Dance Technique courses provide students with experience in one specific form of dance (e.g., modern, jazz, ballet, contemporary, tap). These classes concentrate on improving students' technique and the style of a particular dance form.
Dance Repertory	05002	Dance Repertory courses provide an opportunity for students with prior dance experience to develop dance techniques in small groups. These courses emphasize performance and typically require auditions.
General Dance	05003	Formerly known as Expressive Movement, General Dance courses explore dance content through the artistic processes of creating, performing, responding, and connecting. These courses may introduce dance history, culture, and vocabulary in the context of these processes. General Dance courses may also develop students' ability to move expressively, without an emphasis on particular dance forms or on developing specific dance techniques.
Dance History and Appreciation	05004	Formerly known as Dance Appreciation, Dance History and Appreciation courses help students develop an understanding of how dance serves different civilizations and expand their knowledge of and ability to critique dance as an art form. These courses provide the history of dance and help students develop a dance vocabulary.

Dance-Choreography	05005	Dance—Choreography courses teach students how to apply choreographic principles and dance forms to create fully developed choreography for formal or informal presentations. These courses may also help students create dances with a beginning, middle, and conclusion.
Dance Survey	05006	Dance Survey courses provide students with experience in several dance forms (e.g., modern, jazz, ballet, contemporary, tap). Classes introduce students to the fundamental elements of each technique and the common and unique traits among them.
Dance Improvisation	05007	Dance Improvisation courses help students develop an ability to respond kinesthetically in the moment, understand the elements of dance, relate to each other through movement, experiment with choreographic principles, and expand the boundaries of the definition of dance. These courses may emphasize the process of exploration, individual investigation, and group work.
World/Cultural Dance	05008	World/Cultural Dance courses help students develop an understanding of authentic dances from other nations in the context of the people's history, culture, and customs. These courses may involve creating, performing, and responding to dances of other cultures and/or time periods.
Technical Theater for Dance	05009	Technical Theater for Dance courses teach students the basics of lighting, sound, makeup, costuming, stage management, and other aspects of dance concert production. These courses may also include the practical application of skills.
Social Dance	05010	Social Dance courses teach students the steps, spatial formations and patterns, appropriate partner etiquette, and the relationship of the dance(s) to specific music or musical forms as well as historical or cultural contexts. These courses emphasize the distinct forms of partner or group dances and may include a variety of options (e.g., ballroom, folk, contra, and line dances).

Dance Composition/Composition Seminar	05011	Dance Composition/Composition Seminar courses help students gain an understanding of specific choreographic principles and apply those principles to individual movement studies. These courses may emphasize the process of building dance compositions and discovering methods for connecting different dances.
IB Dance	05012	IB Dance courses prepare students to take the International Baccalaureate (IB) Dance assessment at either the standard (SL) or higher level (HL). IB Dance courses help students develop skills in the composition, performance, and analysis of dance. These courses also help students form an historical and global awareness of dance forms and styles.
Dance—Independent Study	05047	Dance—Independent Study courses, often conducted with instructors or professional dancers/choreographers as mentors, enable students to explore a particular dance form. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular form or style, to explore a topic in greater detail, or to develop more advanced skills.
Introduction to Theater	05051	Introduction to Theater courses provide an overview of the art, conventions, and history of the theater. Although the courses sometimes include experiential exercises, they emphasize learning about theater rather than performance. Course topics include one or more of the following: basic techniques in acting, major developments in dramatic literature, major playwrights, the evolution of theater as a cultural tradition, and critical appreciation of the art.
Theatre Arts	05052	Theater Arts courses focus on the study and performance of drama in its many forms. These courses review a wide range of scripted materials (such as plays, screenplays, teleplays, readers' theater scripts); dramatic criticism; techniques for creating original dramatic works; and the role of dramatic arts in society. Theater Arts courses typically require students to perform collaboratively and be involved in the critique of dramatic works.

Theater—Comprehensive	05053	Theater—Comprehensive courses help students develop experience and skill in one or more aspects of theatrical production. Introductory courses provide an overview of theatrical elements including acting, set design, stage management, directing, playwriting, and production. Advanced courses concentrate on extending and refining dramatic technique, by expanding students' exposure to different types of theatrical techniques and traditions and increasing their participation in public productions.
Theater—Acting/Performance	05055	Theater—Acting/Performance courses provide students with experience and skill development in one or more aspects of theatrical production, by allowing them to concentrate on acting and performance skills. Introductory courses explore fundamentals, while advanced courses extend and refine technique, expand students' exposure to different types of theatrical craft and traditions, and increase their participation in public productions.
Theater—Stagecraft	05056	Theater—Stagecraft courses provide students with experience and skill in one or more aspects of theatrical production, such as lighting, costuming, sound, set construction, makeup, stage management, and the use of computer applications to support these functions. Initial courses are usually introductory in nature, while more advanced courses emphasize improving technique, expanding students' exposure to different types of techniques and traditions, and increasing their chances of helping to mount public productions.
Theater-Directing	05057	Theater—Directing courses focus on developing students' skills in translating a script into a final production and are usually taken after other drama courses. Directing courses enable each student to create an artistic vision and develop a personal aesthetic. These courses may expose students to different types of theatrical techniques and traditions. They also provide students with opportunities to direct the performances of others (in scenes or a full production).

Playwriting and Screenwriting	05058	Formerly known as Playwriting, Playwriting and Screenwriting courses help students understand and employ writing principles and techniques to create original scripts suitable for theater, film, and/or television. These courses explore the appropriate techniques of each genre and may examine the creative writing craft, scene writing, and the creation of a production.
History and Literature of the Theater	05059	History and Literature of the Theater courses explore in depth the structure, elements, and style of dramatic compositions, and, as an extension, how the dramatic literature influenced theatrical production and acting styles throughout history. Some courses may focus more on the literature component than on the theater (with increased emphasis on critique and analysis), but most courses connect these subjects, exploring their interrelationships. Major contributors (playwrights, directors, and so on) and the architecture of the theater may also be included as topics of study.
Musical Theater	05060	Musical Theater courses provide students with the opportunity to experience various aspects of musical theater, including auditioning, singing, acting, and dancing. These courses help students understand the underlying assumptions and values within musical theater and to examine its specific history and evolution, literature, and styles of composition and vocal presentation.
Theatrical Production and Management	05061	Theatrical Production and Management courses prepare individuals to control and direct the planning, design, preparation, and production of theatrical performances. Course content may include instruction in theatrical design, program management, dramatic production, rehearsal management, personnel management and casting, actor coaching, directing concepts and techniques, theater history, scene work, script interpretation, business management, marketing, public relations, and communications skills.

IB Theatre	05062	IB Theatre courses prepare students to take the International Baccalaureate (IB) Theatre exams at either the standard (SL) or higher level (HL). IB Theatre courses encourage students to examine the theory, history, and culture of theatre. These courses also help students develop the organizational and technical skills to express themselves through scripted performance, workshops, and independent project(s).
Drama—Independent Study	05097	Drama—Independent Study courses, often conducted with instructors or artists as mentors, enable students to explore a particular theatrical form. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular form or style, to explore a topic in greater detail, or to develop more advanced skills.
General Band	05101	General Band courses help students develop techniques for playing brass, woodwind, and percussion instruments and their ability to perform a variety of concert band literature styles. These courses may emphasize rehearsal and performance experiences in a range of styles (e.g., concert, marching, orchestral, and modern).
Concert Band	05102	Courses in Concert Band are designed to promote students' technique for playing brass, woodwind, and percussion instruments and cover a variety of band literature styles, primarily for concert performances.
Marching Band	05103	Orchestra courses help develop students' technique for playing strings along with woodwind, brass, and percussion instruments. These courses may emphasize collaboration through rehearsal and performance experiences.
Orchestra	05104	Orchestra courses are designed to develop students' abilities to play brass, woodwind, percussion, and string instruments, covering a variety of string and orchestral literature styles.

Contemporary Instrumental Ensemble	05105	Formerly known as Contemporary Band, Contemporary Instrumental Ensemble courses help students perform a variety of contemporary styles, such as traditional jazz, jazz improvisation, and rock. At the same time, these courses cultivate students' technique on instruments appropriate to the style(s) performed—brass, woodwind, string, percussion instruments, and/or electronic. These ensembles emphasize instrumental music but may also include vocal music. Advanced coursework provides students with opportunities for growth through rehearsal and performance, improvisation, or creating and performing their own compositions.
Small Ensembles	05106	Formerly known as Instrumental Ensemble, Small Ensemble courses help students perform a variety of musical styles (e.g., traditional chamber music, jazz, and rock). At the same time, these courses help cultivate students' technique on instruments appropriate to the style(s) performed—brass, woodwind, string, percussion instruments, and/or electronic. Courses typically range in size from 2 to 20 performers.
Piano	05107	Piano courses provide students an introduction to and refine the fundamentals of music and keyboard techniques such as scales, chords, and melodic lines and then offer instruction in more advanced techniques. Formal and informal performances are typically included.
Guitar	05108	Guitar courses provide students an introduction to and refine the fundamentals of music and guitar-playing techniques, such as strumming and chords, and then offer instruction in more advanced techniques. Formal and informal performances are typically included.
Individual Technique—Instrumental Music	05109	Individual Technique—Instrumental Music courses provide individuals with instruction in instrumental techniques. These courses may be conducted either individually or in a small group; formal and informal performances are typically included.

Chorus	05110	Chorus courses develop students' vocal skills within the context of a large choral ensemble in which they can perform a variety of styles. These courses are designed to develop students' vocal techniques and their ability to sing parts.
Vocal Ensembles	05111	Vocal Ensemble courses help students develop vocal techniques and refine their ability to sing parts in small ensembles (e.g., madrigal, barber shop, gospel). Course goals may include helping students develop their solo singing ability and emphasize one or several ensemble literature styles. These ensembles may include both instrumental and vocal music.
Individual Technique—Vocal Music	05112	Individual Technique—Vocal Music courses provide instruction in and encourage the refinement of vocal techniques other than the ability to sing in groups. These courses may be conducted individually or in small groups. Formal and informal performances may be part of the instructional program.
Music Theory	05113	Music Theory courses provide students with an understanding of the fundamentals of music and include one or more of the following topics: composition, arrangement, analysis, aural development, and sight reading.
AP Music Theory	05114	AP Music Theory courses are designed to be the equivalent of a first-year music theory college course as specified by the College Board. AP Music Theory develops students' understanding of musical structure and compositional procedures. Usually intended for students who already possess performance-level skills, AP Music Theory courses extend and build upon students' knowledge of intervals, scales, chords, metric/rhythmic patterns, and the ways they interact in a composition. Musical notation, analysis, composition, and aural skills are important components of the course.

IB Music	05115	IB Music courses prepare students to take the International Baccalaureate Music exam at either the Subsidiary or Higher level. IB Music courses develop students' knowledge and understanding of music through training in musical skills (listening, performing, and composing); exposure to music theory; and formulation of an historic and global awareness of musical forms and styles. Historical, theoretical, and practical studies are suggested by the IB Curriculum Board.
Music History/Appreciation	05116	Music History/Appreciation courses survey different musical styles and periods with the intent of increasing students' understanding of music and its importance in relation to the human experience. Music History/Appreciation courses may focus on how various styles of music apply musical elements to create an expressive or aesthetic impact.
Music History	05117	Music History courses provide students with an understanding of music, its importance, and context in a selected range of historical periods and/or cultural styles.
Music Appreciation	05118	Music Appreciation courses provide students with an understanding of music and its importance in their lives. Course content focuses on how various styles of music apply musical elements to create an expressive or aesthetic impact.
Composition/Songwriting	05119	Composition/Songwriting courses prepare students to express themselves through creating music. These courses may use conventional or nonconventional notation and may include instrumental and vocal music. Along with musical instruments and vocals, technology may be used for creating, recording, and performing music.
Strings	05120	Strings courses provide students an introduction to and refine the fundamentals of music and string instrument techniques and may include more advanced techniques. These courses teach students the appropriate care, handling, and maintenance of musical instruments. Formal and informal performances are included as part of string instrument instructional programs.

Contemporary Vocal Ensemble	05121	Contemporary Vocal Ensemble courses help students develop vocal techniques while focusing primarily on contemporary stage literature styles, such as traditional jazz, jazz improvisation, and rock. These courses may also focus on gospel, show choir, or barbershop choral group dynamics.
Culturally Influenced Ensemble	05122	Culturally Influenced Ensemble courses help students perform a variety of cultural music styles, such as Mariachi band, steel drum band, Indian gamelan, or African drumming ensembles. At the same time, these courses help students develop techniques on instruments appropriate to the style(s) performed—brass, woodwind, string, percussion instruments, and/or electronic. Courses emphasize instrumental music but may also include vocal music. Advanced coursework provides students with opportunities for growth through rehearsal and performance, improvisation, or creating and performing their own compositions.
Recording and Production	05123	Recording and Production courses provide students with an opportunity to learn and apply skills in music recording techniques, music editing, mixing, and creating finished musical recordings for distribution as sound files.
Technology/Electronic Music	05124	Technology/Electronic Music courses emphasize current technology as a means to create, record, mix, and otherwise interact with music and music media. These courses focus on experimenting with electronic music technology as part of the process for creating music.
Music—Independent Study	05147	Music—Independent Study courses, often conducted with instructors, professional musicians, or voice coaches as mentors, enable students to explore music-related topics. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular form or style, to explore a topic in greater detail, or to develop more advanced skills.

Art Appreciation	05151	Art Appreciation courses introduce students to the historical study of and foundation for many forms of art. These courses help students form an aesthetic framework to examine social, political, and historical events in the world and how visual images express the ideas of individuals and society.
Art History	05152	Art History courses introduce students to significant works of art, artists, and artistic movements that have shaped the art world and have influenced or reflected various periods of history. These courses may emphasize the sequential evolution of art forms, techniques, symbols, and themes. Art History courses also cover the relationship of art to social, political, and historical events throughout the world, while covering multiple artists, aesthetic issues, and the evolution of art.
AP Art History	05153	Designed to parallel college-level Art History courses, AP Art History courses provide the opportunity for students to critically examine architecture, sculpture, painting, and other art forms within their historical and cultural contexts. In covering the art of several centuries (not necessarily in chronological order), students learn to identify different styles, techniques, and influences and to formulate and articulate their reactions to various kinds of artwork.
Visual Art—Comprehensive	05154	Visual Art—Comprehensive courses enable students to explore one or several art forms (e.g., drawing, painting, two- and three-dimensional design, and sculpture) and to create individual works of art. Initial courses emphasize observations, interpretation of the visual environment, visual communication, imagination, and symbolism. Courses cover the language, materials, media, and processes of a particular art form and the design elements used. Advanced courses encourage students to refine their skills while also developing their own artistic styles. Courses may also include the study of major artists, art movements, and styles.

Visual Arts—Drawing/Painting	05155	Visual Arts—Drawing/Painting courses provide a foundation in drawing and painting using a variety of media and techniques, emphasizing observation and interpretation of the visual environment. These courses typically include applying the elements of art and principles of design, along with a study of art and artists from a worldwide perspective, and instruction in the critique process. Advanced courses may encourage students to refine their creative process and develop their own artistic styles.
Visual Arts—Drawing	05156	Visual Arts—Drawing courses provide a foundation in drawing using a variety of techniques and media (such as pen-and-ink, pencil, chalk, and so on), emphasizing observation and interpretation of the visual environment, life drawing, and imaginative drawing. These courses typically include applying the elements of art and principles of design, along with a study of art and artists from a worldwide perspective, and instruction in the critique process. Advanced courses may encourage students to refine their creative processes and develop their own artistic styles.
Visual Arts—Painting	05157	Visual Arts—Painting courses provide a foundation in painting using a variety of techniques and media (such as watercolor, tempera, oils, acrylics, and so on), emphasizing observation and interpretation of the visual environment, life drawing, and imaginative painting. These courses typically include applying the elements of art and principles of design, along with a study of art and artists from a worldwide perspective, and instruction in the critique process. Advanced courses may encourage students to refine their creative processes and develop their own artistic styles.

Visual Arts—Sculpture	05158	Visual Arts—Sculpture courses promote creative expression through three-dimensional works. These courses explore real and abstract sculpture through subtractive (carving), additive (modeling), and assemblage techniques in one or more media. Visual Arts—Sculpture courses typically include the production of real and abstract sculptures while incorporating elements of art and principles of design, along with a study of historical and contemporary sculpture and sculptors from a worldwide perspective. These courses also provide instruction in the critique process.
Ceramics/Pottery	05159	Ceramics/Pottery courses provide students with a foundation in the history of ceramics, with an emphasis on critique, aesthetic inquiry, and creative production. These courses provide knowledge of ceramic techniques (e.g., kiln firing and glazing) and processes, with a focus on creative design and craftsmanship. Courses may include clay modeling, hand building, coil building, casting, and throwing on the potter's wheel.
Printmaking/Graphics	05160	Printmaking/Graphics courses emphasize applying the elements of art and principles of design to both printmaking and visual communications design. These courses help students investigate printmaking media, techniques, and processes, in addition to providing instruction about the purposeful arrangement of images, symbols, and text to communicate a message. Printmaking/Graphics courses also include a study of historical and contemporary printmaking and visual communications design and provide instruction in the critique process.
Printmaking	05161	Printmaking courses provide students with experience in a variety of traditional and digital printmaking media, techniques, and processes. These courses emphasize elements of art and principles of design and introduce the critique process.

Visual Communications Design	05162	Formerly known as Graphic Design. Visual Communications Design courses emphasize applying elements of art and principles of design through the exploration of the purposeful arrangement of images, symbols, and text to communicate a message. These courses may investigate the influence and role of computers in creating these messages. Visual Communications Design courses present a historical and contemporary view of visual communications design and provide instruction in the critique process.
Advertising Design	05163	Advertising Design courses emphasize applying the elements of art and principles of design used in the fields of advertising and commercial art. These courses offer experiences in promoting products or ideas through logos, layouts, illustrations, displays, and lettering and in using a variety of media, techniques, and processes. They also include preparing artwork for reproduction. Advertising Design courses present a historical and contemporary view of advertising art and commercial art and provide instruction in the critique process.
Fibers and Textile Design	05164	Formerly known as Textiles, Fibers and Textile Design courses emphasize applying the elements of art and principles of design in creating textile and fiber works using fiber and fiber-related media, techniques, and processes. These courses may help students understand the suitability of design to materials and the artist's intent in creating textile works of art. They may also include the study the history of fiber and textile art and provide instruction in the critique process.
Crafts	05165	Crafts courses help students apply elements of art and principles of design to the materials and accompanying aesthetics of crafts. These courses may survey a wide range of crafts or may focus on only one type of craft; some possibilities include calligraphy, quilting, silk-screening, cake-decorating, tole-painting, mask-making, knitting, crocheting, paper-making, and so on.

Jewelry	05166	Jewelry courses help students apply elements of art and principles of design to the fabrication of small-scale objects and pieces of jewelry. These courses typically help students develop expressive and technical skills in creating jewelry, using art metals, and exploring design concepts in form and surface decoration. Courses present a historical and contemporary view of using art metals and other elements in jewelry design and provide instruction in the critique process.
Photography	05167	Photography courses provide students with an understanding of photographic media, techniques, and processes. These courses focus on development of photographic compositions through manipulation of the elements of art and principles of design. Photography courses may also include the history of photography, historic movements, image manipulation, critical analysis, and some creative special effects.
Cinematography/Video Production	05168	Formerly known as Film/Videotape, Cinematography/Video Production courses emphasize the application of the elements of art and principles of design relative to the history and development of cinema, television, and video production. Students experience a variety of media, techniques, and processes as they study production values and various styles of cinematography. Students engage in critiques of their cinematic or video productions, those of other students, and productions of professional cinematographers or video artists.
Multimedia Art	05169	Formerly known as Computer-Assisted Art, Multimedia Art courses emphasize applying the elements of art and principles of design relative to the history and development of cinema, television, and video production. These courses provide students with the opportunity to develop foundational skills and knowledge while they also become more adept in cinema, video, digital live production, electronic, and time-based media.

Art Portfolio	05170	Art Portfolio courses offer students the opportunity to create a professional body of work that clearly demonstrates mastery of technical skills and increased conceptual thinking and reflects their personal interests. These courses may include individual critiques and planned group activities for students to display their work publicly.
AP Studio Art—Drawing	05172	Designed for students with a serious interest in art, AP Studio Art—Drawing focuses on a variety of concepts and approaches in drawing, enabling students to demonstrate in-depth knowledge of the processes, range of abilities, and versatile uses of media, technique, problem solving, and scope. They can demonstrate such conceptual variety through the use of one or several media. These courses enable students to refine their skills and create artistic works to submit via portfolio to the College Board for evaluation.
IB Art/Design	05173	IB Art/Design courses prepare students to take the International Baccalaureate (IB) Art/Design exams at either the Standard (SL) or Higher level (HL). IB Art/Design courses help students develop aesthetic and creative faculties and experiences in various visual art forms. They also offer students training in awareness and criticism of art and enable them to create their own quality works of art. Students perform both studio and research work; the research component is designed to investigate particular topics or concepts of interest in further detail.
AP Studio Art—Two-Dimensional	05174	AP Studio Art—Two-Dimensional courses focus on a variety of concepts and approaches in drawing and 2-D design, enabling students to demonstrate a range of abilities and versatility with media, technique, problem solving, and scope. Such conceptual variety can be demonstrated through the use of one or several media. These courses enable students to refine their skills and create artistic works to submit via a portfolio to the College Board for evaluation.

AP Studio Art—Three-Dimensional	05175	AP Studio Art—Three-Dimensional courses focus on a variety of concepts and approaches in 3-D design and creation, enabling students to demonstrate a range of abilities and versatility with media, technique, problem solving, and scope. They can demonstrate such conceptual variety through the use of one or several media. These courses enable students to refine their skills and create artistic works to submit via portfolio to the College Board for evaluation.
Calligraphy/Lettering	05176	Calligraphy/Lettering courses teach various styles of inscribing letters, developments in design and lettering, the romance of lettering through the ages, and the modern use of lettering in advertising and art. These courses present a historical and contemporary view of calligraphy, typography, and lettering and provide instruction in the critique process.
Animation	05177	Animation courses focus on the elements of art and principles of design as applied to two- or three-dimensional animation. These courses emphasize interactive use of drawing and design fundamentals, storyboarding, composition and imaging, shadows/shades, audio and sound creation, and editing. Courses may also include a study of the history of animation, aesthetic issues, roles and functions, and instruction in the critique process.
Fashion Design	05190	Fashion Design courses emphasize applying the elements of art and principles of design in creating clothing and accessories and help students identify the relationships between design and clothing. Courses may also include a study of the history of fashion design, aesthetic issues, roles and functions, and instruction in the critique process.
Industrial Design	05191	Industrial Design courses emphasize applying the elements of art and principles of design and provide study of their application in affecting the function, value, and aesthetic of products. These courses help students analyze and use design principles in their industrial design work and may also include a study of the history of industrial design, aesthetic issues, roles and functions, and instruction in the critique process.

Architectural Design	05192	Architectural Design courses emphasize applying the elements of art and principles of design and provide study of their application in architectural design problems. These courses help students analyze and use design principles in their architectural design work. Architectural Design courses may also include a study of the history of architectural design, aesthetic issues, roles and functions, and instruction in the critique process.
Interior Design	05193	Interior Design courses emphasize applying the elements of art and principles of design and provide study of their application in interior design problems. Interior Design courses focus on technical aspects of the design process, including building codes, legal building restrictions, building lot requirements, sustainable materials and construction. These courses help students analyze and use a variety of materials, techniques, and processes in their interior design work. Courses may also include a study of the history of interior design, aesthetic issues, roles and functions, and instruction in the critique process.
Visual Arts—Independent Study	05197	Visual Art—Independent Study courses, often conducted with instructors or professional artists as mentors, enable students to explore a particular art form or topic. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular form or style, to explore a topic in greater detail, or to develop more advanced skills.
Interdisciplinary Arts	05201	Formerly known as Integrated Fine Arts, Interdisciplinary Arts courses explore communication across the arts disciplines: any subset or all of the visual arts, music, drama, theater, dance, and literature may be addressed in the curriculum for these courses. Students study and critique the works of others and participate in or produce art themselves. These courses often include comparative study of various art forms over time (i.e., the interrelationship of theater and visual arts of a particular time period and culture).

Fine and Performing Art—Independent Study	05997	Fine and Performing Art—Independent Study courses, often conducted with instructors or professional artists as mentors, enable students to explore a particular art form. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular form or style, to explore a topic of in greater detail, or to develop more advanced skill.
Comparative Religion	07002	Comparative Religion courses survey and compare the various forms and values of several world religions, offering students a basic understanding of the world’s diverse religious faiths and practices. Course topics typically include the belief systems of adherents; the relationships among humans, nature, ancestors, and the spiritual world; and the historical development of each religion.
Eastern Religions	07003	Similar to Comparative Religion, Eastern Religions courses provide students with an overview of various religions and belief systems but focus on those of the Eastern World. Particular religious or philosophical systems of study usually include Buddhism, Hinduism, Islam, Taoism, Shintoism, and Confucianism, among others.
Western Religions	07004	Similar to Comparative Religion, Western Religions courses provide students with an overview of various religions and belief systems but focus on those of the Western World. Particular religious or philosophical systems of study usually include Judaism; Christianity (including various faiths such as those of Catholics, Episcopalians, Baptists, Quakers, Mormons, Mennonites, and others); and Native Indian belief systems, among others.
Bible History	07008	Bible History treats the Bible as a historical document and provide an overview of significant biblical events. The content usually includes geography; the relationship among cultures, belief systems, and the events chronicled in the Bible; and early Jewish or Christian Church history.

Religious Figures	07010	Religious Figures courses offer students the opportunity to examine the lives and messages of one or several people who are central to a religious faith, such as a prophet, apostle, philosopher, or leader. In addition to a historical study of the person (or people), these courses typically emphasize how the teachings of these individuals influence the faith and culture of a religious group.
Justice, Peace, and Faith	07014	Justice, Peace, and Faith courses examine the scriptural foundations for justice, typically with a historical overview of a faith's social teaching. These courses discuss such topics as poverty, hunger, conflict, discrimination, justice, and environmental issues, with a view toward developing students' ability to critically reflect upon and analyze their own roles and responsibilities.
Introduction to Computer Technology	10001	Formerly known as Introduction to Computers, Introduction to Computer Technology courses introduce students to computers, including peripheral and mobile devices; the functions and uses of computer technology; the language used in the industry; possible applications of various computer-based technologies; and occupations related to computer technology hardware and software industries. These courses typically explore legal and ethical issues associated with computer technology use, as well as how changes influence modern society. Students may also be required to perform some computer technology operations.
Computing Systems	10002	Computing Systems courses offer a broad exploration of the use of computers in a variety of fields. These courses have a considerable range of content, but typically include the introduction of robotics and control systems, computer-assisted design, computer-aided manufacturing systems, and other computer technologies as they relate to industry applications.

Computer and Information Technology	10003	Computer and Information Technology courses teach students to operate and use computer and information technology, emphasizing their role as tools to communicate more effectively, conduct research more efficiently, and increase productivity. Course content includes the legal and ethical issues involved with computer technology and use.
Computer Applications	10004	In Computer Applications courses, students acquire knowledge of and experience in the proper and efficient use of previously written software packages. These courses explore a wide range of applications, including (but not limited to) word-processing, spreadsheet, presentation, graphics, and database programs. Courses may also cover the use of electronic mail and online collaborative software.
Business Computer Applications	10005	In Business Computer Applications courses, students expand their knowledge of and experience in the proper and efficient use of previously written software packages, particularly those used in business. Generally, these courses explore a wide range of applications including (but not limited to) word processing, spreadsheet, presentation, graphics, and database programs, and they may also cover topics such as electronic mail, desktop publishing, and telecommunications. Advanced topics may include integrated software applications, including printed, electronic, and Web publications; computer maintenance activities; and Web site development.

Telecommunications	10006	Telecommunications courses address the growth in global communications and the emerging equipment and systems needed to successfully communicate in a global environment. These courses cover such topics as data communication protocol and systems, government regulations of the communications industry, the use of cost-effective and productive tools to transmit messages and data, and live synchronistic video exchanges. Other topics may include telecommunications terminology, tools and test equipment; customer service experience; and installation, repair, and delivery of telecommunications systems. In these courses, students may learn about such communication systems as e-mail, internet, or e-commerce, local area network (LAN), wide area network (WAN), voice transmission, cell phone technology, teleconferencing, and videoconferencing.
IB Information Technology in a Global Society	10007	IB Information Technology in a Global Society courses prepare students to take the International Baccalaureate Information Technology exams and examine the interaction among information, technology, and society. Course content is designed to help students develop a systematic, problemsolving approach to processing and analyzing information using a range of information tools. In these courses, students also discuss and evaluate how modern information technology affects individuals, relationships among people, and institutions and societies.
Particular Topics in Computer Literacy	10008	These courses examine particular topics related to general computer literacy other than those already described, such as privacy issues or instruction in using a particular software application.
Computer Literacy	10010	Computer Literacy courses provide to students the knowledge and ability to use computers and technology efficiently. Typically, course content includes exposure to word-processing, spreadsheet, and presentation applications, but also may include the various uses of computers in modern society. Specific course content aligns with state standards to promote students' technological literacy.

Computer Science Principles	10011	Computer Science Principles courses provide students the opportunity use programming, computational thinking, and data analytics to create digital artifacts and documents representing design and analysis in areas including the Internet, algorithms, and the impact that these have on science, business, and society. Computer Science Principles courses teach students to use computational tools and techniques including abstraction, modeling, and simulation to collaborate in solving problems that connect computation to their lives.
Exploring Computer Science	10012	Exploring Computer Science courses present students with the conceptual underpinnings of computer science through an exploration of human computer interaction, web design, computer programming, data modeling, and robotics. While these courses include programming, the focus is on the computational practices associated with doing computer science, rather than just a narrow focus on coding, syntax, or tools. Exploring Computer Science courses teach students the computational practices of algorithm design, problem solving, and programming within a context that is relevant to their lives.
Emerging Technologies-Computing	10040	New advances in technology offer promise of more efficiency, convergence of existing technologies, improved productivity and represent progressive development. The degree of impact, status, deployment and economic viability affect future opportunities for society. This course offers opportunity to learn utilize, and appreciate those impacts in future workforce environments.
Computer Literacy—Independent Study	10047	Computer Literacy—Independent Study courses, often conducted with instructors as mentors, enable students to explore computer-related topics of interest. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular specialization, to explore a topic in greater detail, or to develop more advanced skills.

Information Management	10051	Information Management courses provide students with the knowledge and skills to develop and implement a plan for an information system that meets the needs of business. Students develop an understanding of information system theory, skills in administering and managing information systems, and the ability to analyze and design information systems.
Database Management and Data Warehousing	10052	Database Management and Data Warehousing courses provide students with the skills necessary to design databases to meet user needs. Courses typically address how to enter, retrieve, and manipulate data into useful information. More advanced topics may cover implementing interactive applications for common transactions and the utility of mining data.
Database Applications	10053	Database Application courses provide students with an understanding of database development, modeling, design, and normalization. These courses typically cover such topics as SELECT statements, data definition, manipulation, control languages, records, and tables. In these courses, students may use Oracle WebDB, SQL, PL/SQL, SPSS, and SAS and may prepare for certification.
Data Systems/Processing	10054	Data Systems/Processing courses introduce students to the uses and operation of computer hardware and software and to the programming languages used in business applications. Students typically use BASIC, COBOL, and/or RPL languages as they write flowcharts or computer programs and may also learn data-processing skills.
Particular Topics in Management Information Systems	10055	These courses examine particular topics in management information systems other than those already described.
Management Information Systems—Independent Study	10097	Management Information Systems—Independent Study courses, often conducted with instructors as mentors, enable students to explore topics related to management information systems. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular specialization, to explore a topic in greater detail, or to develop more advanced skills.

Network Technology	10101	Network Technology courses address the technology involved in the transmission of data between and among computers through data lines, telephone lines, or other transmission media, such as hard wiring, wireless, cable networks, and so on. These courses may emphasize the capabilities of networks, network technology itself, or both. Students typically learn about network capabilities and network technology, including the software, hardware, and peripherals involved in setting up and maintaining a computer network.
Networking Systems	10102	Networking Systems courses are designed to provide students with the opportunity to understand and work with hubs, switches, and routers. Students develop an understanding of LAN (local area network), WAN (wide area network), wireless connectivity, and Internet-based communications (including cloud-based computing), with a strong emphasis on network function, design, and installation practices. Students acquire skills in the design, installation, maintenance, and management of network systems that may help them obtain network certification.
Area Network Design and Protocols	10103	Area Network Design and Protocols courses address the role of computers in a network system, the Open Systems Interconnection (OSI) model, structured wiring systems, and simple LAN (local area network) and WAN (wide area network) designs.
Router Basics	10104	Router Basics courses teach students about router components, installation, and configuration using routers (e.g., CISCO) switches and the IOS (Internetwork Operation System). These courses also cover such topics as TCP/IP protocol, IP addressing, subnetting concepts, and network trouble-shooting.

NetWare Routing	10105	NetWare Routing courses introduce students to such topics as Virtual LANs (VLAN) and switched internetworking, comparing traditional shared local area network (LAN) configurations with switched LAN configurations, and they also discuss the benefits of using a switched VLAN architecture. These courses also may cover routing protocols like RIP, IGRP, Novell IPX, and Access Control Lists (ACLs).
Wide Area Telecommunications and Networking	10106	Wide Area Telecommunications and Networking courses provide students with the knowledge and skills to enable them to design Wide Area Networks (WANs) using ISDN, Frame-Relay, and PPP. These courses provide students with an understanding of internetworking and expertise in trouble-shooting and assessing the adequacy of network configurations to meet changing conditions. Topics may include also Local Area Network (LAN) segmentation.
Wireless Networks	10107	Wireless Networks courses focus on the design, planning, implementation, operation, and trouble-shooting of wireless computer networks, including local access networks (LANs). These courses typically include a comprehensive overview of best practices in technology, security, and design.
Network Security	10108	Network Security courses provide students with an understanding of network security principles and implementation. Course topics usually include authentication, the types of attacks and malicious code that may be used against computer networks, the threats and countermeasures for e-mail, Web applications, remote access, and file and print services. These courses may also cover a variety of security topologies as well as technologies and concepts used for providing secure communication channels, secure internetworking devices, intrusion detection systems, and firewalls.

Essentials of Network Operating Systems	10109	Essentials of Network Operating Systems courses provide students with an overview of multi-user, multi-tasking network operating systems. In these courses, students study the characteristics of operating systems, such as Linux, and various Windows network operating systems and explore a range of topics including installation procedures, security issues, back-up procedures, and remote access. Advanced topics may include network administration, including account management, training, evaluating new technology, developing system policies, troubleshooting, e-mail and business communications and Web site management.
Microsoft Certified Professional (MCP)	10110	Microsoft Certified Professional courses provide students with the knowledge and skills necessary to be employed as a network administrator in the latest Windows server-networking environment. Topics include installing, configuring, and troubleshooting the Windows server. These courses prepare students to set up network connections; manage security issues and shares; and develop policies. Students are typically encouraged to take the MCP exam.
Particular Topics in Networking Systems	10111	These courses examine particular topics in networking systems other than those already described.
Local Area Networking	10112	Local Area Networking courses introduce students to local area networking (LAN) administration skills, operating systems, basic user skills, defining network objects, building a simple LAN topology applying principles of cabling, LAN switching, designing file systems, managing user access, securing file systems, working with directory service software security, implementing network printing, implementing login scripts, and managing user environments.
Networking Systems—Independent Study	10147	Networking Systems—Independent Study courses, often conducted with instructors as mentors, enable students to explore topics related to networking systems. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular specialization, to explore a topic in greater detail, or to develop more advanced skills.

Business Programming	10151	Business Programming courses provide students with experience in using previously written software packages. Topics may include loops, arrays, and functions as well as instruction on how to design and write programs of their own. These courses contain a business industry focus and provide an overview of the principles of object-oriented design and programming (e.g., Visual Basic [VB], C++, Java, RPL) related to the business industry.
Computer Programming	10152	Computer Programming courses provide students with the knowledge and skills necessary to construct computer programs in one or more languages. Computer coding and program structure are often introduced with the BASIC language, but other computer languages, such as Visual Basic (VB), Java, Pascal, C++, and C#, may be used instead. Students learn to structure, create, document, and debug computer programs. Advanced courses may include instruction in object-oriented programming to help students develop applications for Windows, database, multimedia, games, mobile and/or Web environments. An emphasis is placed on design, style, clarity, and efficiency. In these courses, students apply the skills they learn to relevant authentic applications.
Visual Basic (VB) Programming	10153	Visual Basic (VB) Programming courses provide an opportunity for students to gain expertise in computer programs using the Visual Basic (VB) language. As with more general computer programming courses, the emphasis is on how to structure and document computer programs and how to use problem-solving techniques. These courses cover such topics as the use of text boxes, scroll bars, menus, buttons, and Windows applications. More advanced topics may include mathematical and business functions and graphics.

C++ Programming	10154	C++ Programming courses provide an opportunity for students to gain expertise in computer programs using the C++ language. As with more general computer programming courses, the emphasis is on how to write logically structured programs, include appropriate documentation, and use problem-solving techniques. More advanced topics may include multi-dimensional arrays, functions, sorting, loops, and records.
Java Programming	10155	Java Programming courses provide students with the opportunity to gain expertise in computer programs using the Java language. As with more general computer programming courses, the emphasis is on how to structure and document computer programs, using problem-solving techniques. Topics covered in the course include syntax, I/O classes, string manipulation, and recursion.
Computer Programming—Other Language	10156	Computer Programming—Other Language courses provide students with the opportunity to gain expertise in computer programs using languages other than those specified (such as Pascal, FORTRAN, Python, or emerging languages). As with other computer programming courses, the emphasis is on how to structure and document computer programs, using problem-solving techniques. As students advance, they learn how to best utilize the features and strengths of the language being used.
AP Computer Science A	10157	Following the College Board’s suggested curriculum designed to mirror college-level computer science courses, AP Computer Science A courses emphasize object-oriented programming methodology with a focus on problem solving and algorithm development. These courses cover such topics as object-oriented program design; program implementation; program analysis; standard data structures; standard algorithms; and the ethical and social implications of computing systems.

IB Computing Studies	10159	IB Computer Studies courses prepare students to take the International Baccalaureate Computing Studies exam at either the Subsidiary or Higher level. The courses emphasize problem analysis, efficient use of data structures and manipulation procedures, and logical decision-making. IB Computing Studies courses also cover the applications and effects of the computer on modern society as well as the limitations of computer technology.
Particular Topics in Computer Programming	10160	These courses examine particular topics in computer programming other than those already described.
Game Design and Authoring for the Web	10165	Game technologies represent the culmination of logic, sequence, tool utilization, and extension of skill. Programming process for this course will utilize all previously learned factors of programming logic, artistry, and interactivity.
Computer Programming—Independent Study	10197	Computer Programming—Independent Study courses, often conducted with instructors as mentors, enable students to explore topics related to computer programming. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular specialization, to explore a topic in greater detail, or to develop more advanced skills.
Web Page Design	10201	Web Page Design courses teach students how to design websites by introducing them to and refining their knowledge of site planning, page layout, graphic design, and the use of markup languages—such as Extensible Hypertext Markup, JavaScript, Dynamic HTML, Document Object Model, and Cascading Style Sheets—to develop and maintain a web page. These courses may also cover security and privacy issues, copyright infringement, trademarks, and other legal issues relating to the use of the Internet. Advanced topics may include the use of forms and scripts for database access, transfer methods, and networking fundamentals.

Computer Graphics	10202	Computer Graphics courses provide students with the opportunity to explore the ways in which computers can produce visual imagery that communicates information and ideas effectively to multiple audiences using a variety of media and formats. Course topics may include principles and elements of design, image creation, image manipulation, and image types.
Interactive Media	10203	Interactive Media courses provide students with the knowledge and skills to create, design, and produce interactive digital media products and services. The courses may emphasize the development of digitally generated and/or computer-enhanced media. Course topics may include 3D animation, graphic media, web development, and virtual reality. Upon completion of these courses, students may be prepared for industry certification.
Particular Topics in Media Technology	10204	These courses examine particular topics in internet design and applications other than those already described.
Computer Gaming and Design	10205	Computer Gaming and Design courses prepare students to design computer games by studying design, animation, artistic concepts, digital imaging, coding, scripting, multimedia production, and game play strategies. Advanced course topics include, but are not limited to, level design, environment and 3D modeling, scene and set design, motion capture, and texture mapping.
Mobile Applications	10206	Mobile Applications courses provide students with opportunities to create applications for mobile devices using a variety of commercial and open source software. These courses typically address the installation and modification of these applications, as well as customer service skills to handle user issues.
Animation	10210	This course emphasizes the development of digitally generated and/or computer-enhanced media, including 2D and 3D spatial elements, graphic representation, management of movement, environmental representation [including texture, color, value, form, line, and space], recording media, and distribution tools and methodologies. Instruction provides venue for such sophisticated, programming sequences and methodologies as are integrated into actions of the characters creating new behaviors.

Media Technology—Independent Study	10247	Media Technology—Independent Study courses, often conducted with instructors as mentors, enable students to explore topics related to media technology. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular specialization, to explore a topic in greater detail, or to develop more advanced skills.
Computer Technology	10251	Computer Technology courses introduce students to the features, functions, and design of computer hardware and provide instruction in the maintenance and repair of computer components and peripheral devices.
Computer Maintenance	10252	Computer Maintenance courses prepare students to apply basic electronic theory and principles in diagnosing and repairing personal computers and input/output devices. Topics may include operating, installing, maintaining, and repairing computers, network systems, digital control instruments, programmable controllers, and processors.
Information Support and Services	10253	Information Support and Services courses prepare students to assist users of personal computers by diagnosing their problems in using application software packages and maintaining security requirements.
IT Essentials: PC Hardware and Software	10254	IT Essentials: PC Hardware and Software courses provide students with in-depth exposure to computer hardware and operating systems. Course topics include the functionality of hardware and software components as well as suggested best practices in maintenance and safety issues. Students learn to assemble and configure a computer, install operating systems and software, and troubleshoot hardware and software problems. In addition, these courses introduce students to networking and often prepare them for industry certification.
CISCO—The Panduit Network Infrastructure Essentials (PNIE)	10255	CISCO—PNIE courses provide students with the knowledge to create innovative network infrastructure solutions. These courses offer students basic cable installer information and help them acquire the skills to build and use the physical layer of network infrastructure and develop a deeper understanding of networking devices.

Particular Topics in Information Support and Services	10256	These courses examine particular topics in computer support, maintenance, and repair other than those already described.
Information Support and Services—Independent Study	10297	Information Support and Services—Independent Study courses, often conducted with instructors as mentors, enable students to explore topics related to computer information support and services. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular specialization, to explore a topic in greater detail, or to develop more advanced skills.
Information Technology—Independent Study	10997	Formerly Computer and Information Sciences—Independent Study, Information Technology—Independent Study courses, often conducted with instructors as mentors, enable students to explore computer-related topics of interest. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular specialization, to explore a topic in greater detail, or to develop more advanced skills.
Introduction to Communication	11001	Introduction to Communication courses enable students to understand and critically evaluate the role of media in society. Course content typically includes investigation of visual images, printed material, and audio segments as tools of information, entertainment, and communication to influence opinion; improvement of presentation and evaluative skills in relation to mass media; recognition of various techniques for delivery of a particular message; and, in some cases, creation of a media product. The course may concentrate on a particular medium.
Communication Technology	11002	Communication Technology courses enable students to effectively communicate ideas and information through experiences dealing with drafting, design, electronic communication, graphic arts, printing process, photography, telecommunications, and computers. Additional topics covered in the course include information storage and retrieval. Drafting equipment may be used to make scale drawings, including multi-view drawing, photographs, and poster mock-ups.
Particular Topics in Communication	11003	These courses examine specific topics in communication other than those already described.

Social Media	11004	Social Media courses expose students to various types of social media and how social media has influenced society. These courses emphasize the forms, functions, regulations, implications, and utilization of social media.
Communication—Independent Study	11047	Communication—Independent Study courses, often conducted with instructors as mentors, enable students to explore topics of interest related to mass communications. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular application, to explore a topic in greater detail, or to develop more advanced skills.
Audio/Visual Production	11051	Audio/Visual Production courses provide students with the knowledge and skills necessary for television, video, film, and/or radio production. Writing scripts, camera operation, use of graphics and other visuals, lighting, audio techniques, editing, production principles, and career opportunities are typical topics covered within production courses. Students are usually required to produce their own program or segment. Additional topics such as broadcast industry regulations, radio/TV operation, power of the medium, photography, transmission technology, and so on may be included.
Commercial Photography	11052	Commercial Photography courses provide instruction in the use of cameras and laboratory film- processing techniques. Topics covered in the course include composition and color dynamics; contact printing; enlarging; developing audio and visual images; use of camera meters, air brushes, and other photographic equipment; portrait, commercial, and industrial photography; processing microfilm; and preparing copy for printing or for graphic arts processing.
Photographic Laboratory and Darkroom	11053	Photographic Laboratory and Darkroom courses prepare students to develop and print still or motion picture film. Topics covered in the course may include controlling resultant prints; touching up negatives; and finishing, coloring, restoring, and copying prints.

Photo Imaging	11054	Photo Imaging courses provide students with the opportunity to effectively communicate ideas and information via digital, film, still and video photography. Topics covered typically include composition, layout, lighting and supplies. More advanced courses may include instruction in specialized camera and equipment maintenance, application to commercial and industrial need and photography business operations.
Video	11055	Video courses enable students to explore video communications, incorporating both the technical and artistic aspects of video media. Topics covered in the course include the use of video equipment and techniques, and students typically create a video presentation. Advanced course topics may include creating various forms of film media including silent film; sport and music video; and self portrait video.
Particular Topics in Audio/Video Technology and Film	11056	These courses examine specific topics in audio and video technology and film other than those already described.
Audio/Video Technology and Film—Independent Study	11097	Audio/Video Technology and Film—Independent Study courses, often conducted with instructors as mentors, enable students to explore topics of interest related to A/V technology or film. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular application, to explore a topic in greater detail, or to develop more advanced skills.
Journalism	11101	Journalism courses (typically associated with the production of a school newspaper, yearbook, or literary magazine) emphasize writing style and technique as well as production values and organization. Journalism courses introduce students to the concepts of newsworthiness and press responsibility; develop students' skills in writing and editing stories, headlines, and captions; and teach students the principles of production design, layout, and printing. Photography, photojournalism, and digital technology skills may be included.

Photojournalism	11102	Photojournalism courses expose students to the manner in which photography is used to convey information and experiences. Typically coordinated with production of the school newspaper, yearbook, or other media product, photojournalism courses provide students with the opportunity to improve their photo composition and digital technology skills, and to apply their art to journalistic endeavors. These courses may also cover film development.
Broadcasting Technology	11103	Broadcasting Technology courses provide students with the knowledge and skills to produce television broadcast programs. Typically, students prepare and produce short programs, learning the technical aspects of the operation and how to evaluate programming and assess audience reaction and impact.
Publication Production	11104	Publication Production courses provide students with the knowledge and skills necessary to produce the school newspaper, yearbook, literary magazine, or other printed publication. Students may gain experience in several components (writing, editing, layout, production, and so on) or may focus on a single aspect while producing the publication.
Particular Topics in Journalism and Broadcasting	11105	These courses examine specific topics in journalism and broadcasting other than those already described.
Emerging Technologies in Journalism	11106	Emerging Technologies in Journalism courses promote the development of the necessary skills for journalism. Course topics may include an exploration of the role media and the communications industry has in society, technical skills related to journalistic writing and interviewing, electronic communications, journalistic blogging, and the ethical and legal issues related to technology in media and communications.

Radio Production	11107	Radio Production courses address practices related to the management and operation of a broadcasting station. Students are introduced to the radio industry, news reporting, and broadcast engineering. In these courses, students learn basic electricity and electronics, including all aspects of safety. Topics typically include operating audio boards, announcing, creating and producing audio scripts, and using digital audio software. Advanced courses may explore direct programming, on-air performance, and analysis of radio markets.
Journalism and Broadcasting—Independent Study	11147	Journalism and Broadcasting—Independent Study courses, often conducted with instructors as mentors, enable students to explore topics of interest related to journalism, broadcasting, and mass media. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular application, to explore a topic in greater detail, or to develop more advanced skills.
Digital Media Technology	11151	These courses are designed to give students the skills necessary to support and enhance their learning about digital media technology. Topics covered in the course may include internet research, copyright laws, web-publishing, use of digital imagery, electronic forums, newsgroups, mailing lists, presentation tools, and project planning.
Desktop Publishing	11152	Desktop Publishing courses integrate the knowledge and skills learning in word processing with the concepts, procedures and application of desktop publishing. Students learn to format, create and proofread brochures, programs, newsletters, web pages, presentations and manuscripts.
Digital Media Design and Production	11153	Digital Media Design and Production courses teach students the fundamentals of graphic design and production and provide students with the opportunity to apply these principles to printed media, digital presentation media, and interactive media.

Commercial Graphic Design	11154	Commercial Graphic Design courses teach students to use artistic techniques to effectively communicate ideas and information to business and customer audiences via illustration and other forms of digital or printed media. Topics covered may include concept design, layout, paste-up and techniques such as engraving, etching, silkscreen, lithography, offset, drawing and cartooning, painting, collage and computer graphics.
Graphic Technology	11155	Graphic Technology courses help students apply artistic and computer techniques to the interpretation of technical and commercial concepts. Topics covered may include computer assisted art and design, printmaking, concept sketching, technical drawing, color theory, imaging, studio techniques, still life modeling, and commercial art business operations. Advanced topics may include topographic arrangements of print and/or electronic graphic and textual products, printing and lithographic equipment and operations, digital imaging, print preparation, desktop publishing and web page design.
Photography and Printing Technology	11156	Photography and Printing Technology courses expose students to the tools, materials and processes involved in mass production of photography and printing. Types of printing covered in the course may include intaglio, relief, planographic, screen processes printing, silk screening, serigraphy processes and thermograph. Additional topics may include the use of cameras, composition, imposition, presswork, and computer aided publishing.
Photoengraving	11157	Photoengraving courses teach students to photograph illustration and other copy that cannot be set in type, to develop negatives, and to prepare photosensitized metal plates for use in printing.
Print Press Operations	11158	These courses expose students to the necessary skills for operating a print press. Topics covered in this course include how to prepare, operate and maintain printing processes.
Particular Topics in Printing Technology and Production	11159	These courses examine specific topics in printing production, such as book binding or silk screen print making, other than those already described.

Printing Technology—Independent Study	11197	Printing Technology—Independent Study courses, often conducted with instructors as mentors, enable students to explore topics of interest related to the print medium. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular application, to explore a topic in greater detail, or to develop more advanced skills.
Communication and Audio/Video Technology—Independent Study	11997	Communication and Audio/Video Technology—Independent Study courses, often conducted with instructors as mentors, enable students to explore topics of interest related to mass communication and its technologies. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular application, to explore a topic in greater detail, or to develop more advanced skills.
Business/Office Career Exploration	12001	Business/Office Career Exploration courses expose students to the occupational opportunities available in business including, but not limited to, general business, business information management, human resources management, operations management, administrative support, accounting, and marketing fields. Emphasis is placed on responsibilities, qualifications, work environments, and career paths. These courses may also include consumer education topics, keyboard exposure, and/or hands-on experience within the various occupational areas.
Office Procedures—Comprehensive	12002	Office Procedures—Comprehensive courses provide students with numerous opportunities to explore and understand the responsibilities and duties common to most office personnel. These comprehensive courses cover such topics as communication skills, project management, reception skills, technologies for distance communications, filing and record management, mail handling, scheduling meetings and conferences, creating itineraries, and word processing.

Office and Administrative Technologies	12003	Office and Administrative Technologies courses provide students with instruction and experience in developing technical, problem-solving, and decision-making skills essential for office and/or administrative occupations. Emphasis is placed on integrating and applying knowledge and skills to realistic office and administrative situations utilizing current and relevant technology.
Office Services	12004	Office Services courses introduce students to and help them refine their clerical and office assistant skills. Course content typically covers filing, telephone, and keyboarding skills; reprographic machinery and procedures; communications skills; and so on.
Keyboarding	12005	Keyboarding courses provide students with an introduction to the keyboard (letters, numbers, and symbols), basic machine operation, and proper keystroke technique. As students progress, they improve their speed and accuracy and produce increasingly complex documents. Such courses help students develop keyboard proficiency, document production skills, and problem-solving skills.
Word Processing	12006	Word Processing courses introduce students to automated document production using one or more software packages. These courses may introduce keyboarding techniques or may require prior experience. A parallel focus is placed on the use of software commands and functions to create, edit, format, and manipulate documents, capitalizing on the power offered by word processing software programs. These courses may also cover file and disk management and other computer-related skills.

Recordkeeping	12007	Recordkeeping courses help students develop knowledge and skills related to the principles and procedures involved in recording personal financial transactions as well as transactions typically undertaken by small businesses. Emphasis may be placed on software packages for accounting, database management, personal banking, budgeting, and income tax calculations. Additional emphasis is usually placed on cashier and clerk procedures, inventory control for small businesses, database management, merchandising, and payroll.
Particular Topics in Administration	12008	These courses examine specific topics related to business administration not otherwise described, such as a focus on dictation or office machinery, rather than provide a general study of office administration principles and techniques.
Business Communications	12009	Business Communications courses help students to develop an understanding and appreciation for effective communication in business situations and environments. Emphasis is placed on all phases of communication: speaking, listening, thinking, responding, reading, writing, communicating nonverbally, and utilizing technology for communication. Business communication functions, processes, and applications in the context of business may be practiced through problem-based projects and realworld application.
Administration—Independent Study	12047	Administration—Independent Study courses, often conducted with instructors as mentors, enable students to explore business administration-related topics of interest. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular application, to explore a topic in greater detail, or to develop more advanced skills.

Business Essentials	12050	<p>This is a core course designed to give students an overview of the business, marketing, finance career cluster occupations. Students will develop an understanding of how academic skills in mathematics, economics, and written and oral communications are integral components of success in these occupations. Students will examine current events to determine their impact on business and industry and legal and ethical behavior, acquire knowledge of safe and secure environmental controls to enhance productivity, determine how resources should be managed to achieve company goals, and identify employability and personal skills needed to obtain a career and be successful in the workplace. As students learn about different types of business ownership, they will interpret industry laws and regulations to ensure compliance, identify principles of business management, and analyze business practices to determine ethics and social responsibility.</p>
Introductory Business	12051	<p>Introductory Business courses survey an array of topics and concepts related to the field of business. These courses introduce business concepts such as banking and finance, the role of government in business, consumerism, credit, investment, and management. They usually provide a brief overview of the American economic system, small businesses, and corporate organizations. Introductory Business courses may also expose students to the varied opportunities in administration, accounting, management, and related fields.</p>
Business Management	12052	<p>Business Management courses acquaint students with management opportunities and effective human relations. These courses provide students with the skills to perform planning, staffing, financing, and controlling functions within a business. In addition, they usually provide a macro-level study of the business world, including business structure and finance, and the interconnections among industry, government, and the global economy. The course may also emphasize problem-based, real-world applications of business concepts and use accounting concepts to formulate, analyze, and evaluate business decisions.</p>

Entrepreneurship	12053	Entrepreneurship courses help students develop the knowledge and skills necessary to own and operate their own businesses. The course content typically covers topics from a number of fields: economics, marketing principles, human relations and psychology, business and labor law, legal rights and responsibilities of ownership, business and financial planning, finance and accounting, communication, information management, risk management, and strategic management. Several topics surveyed in Business Management courses may also be included.
Business Law	12054	Business Law courses emphasize legal concepts that are relevant to business and business organizations. Topics examined in these courses typically include contracts, buying/renting property, installment buying, insurance, buyer/seller relationships, negotiable instruments, employment, taxes, insurance, commercial papers, legal organizational structures, and consumer liabilities.
Business Principles and Management	12055	Business Principles and Management courses are designed to provide students with an understanding of the American business system, its organizations, and its management. These courses examine the various leadership and management styles of a variety of successful business organizations, large or small.
Human Resources and Labor Relations	12057	Human Resources and Labor Relations courses focus on the managing of human resources essential to effective business operations. These courses cover such topics as the history of the labor movement in the United States, the nature of collective bargaining and conflict resolution in a unionized environment, and effective relationships between the employees of a business and the management.
Human Resources Management	12058	Human Resources Management courses provide students with an understanding of and skills in the effective use of leadership, management, communications, and interpersonal skills in achieving the goals of an organization.

IB Business and Management	12059	IB Business and Management courses prepare students to take the International Baccalaureate Business and Management exam at either the Subsidiary or Higher level. In keeping with Individual and Society courses, IB Business and Management promotes problem-solving by identifying the problem, selecting and interpreting data, applying appropriate analytical tools, and recommending solutions by evaluating their quantitative and qualitative implications. These courses also equip students with knowledge and understanding of business terminology, concepts and principles.
Business Ethics	12060	Business Ethics courses focus on the study of ethical principles and the application of those principles to situations relevant to decision making in the professional and business worlds.
Management—Independent Study	12097	Management—Independent Study courses, often conducted with instructors as mentors, enable students to explore business management-related topics of interest. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular specialization, to explore a topic in greater detail, or to develop more advanced skills.
Banking and Finance	12101	Banking and Finance courses provide students with an overview of the American monetary and banking system as well as types of financial institutions and the services and products that they offer. Course content may include government regulations; checking, savings, and money market accounts; loans; investments; and negotiable instruments.
Banking	12102	Banking courses expose students to the American monetary and banking system. These courses may also address examining and applying the methods used for measuring the financial performance of banks in addition to examining specialized brokerage products, current issues, and future trends in banking.

Finance	12103	Finance courses are similar to Banking and Finance courses, but they focus specifically on finance, addressing how businesses raise, distribute, and use financial resources while managing risk. Course content typically involves modeling financial decisions (such as borrowing, selling equity or stock, lending or investing) typically undertaken by businesses.
Accounting	12104	Accounting courses introduce students to and expand their knowledge of the fundamental accounting principles and procedures used in businesses through integrating and using accounting-related software and information systems. Course content includes the recording and completion of the accounting cycle, payroll, taxes, debts, depreciation, and periodic adjustments through a computerized accounting program. Students may learn how to apply standard auditing principles and to prepare budgets and final reports. Calculators, electronic spreadsheets, or computer accounting software are usually used. Advanced topics may include principles of partnership and corporate accounting and the managerial uses of control systems and the accounting process.
Risk Management and Insurance	12106	Risk Management and Insurance courses provide information about various risk management tools and techniques and may cover the perspective of insurance professionals and business owners. These courses may emphasize the specific uses, costs, and effectiveness of insurance products.
Securities and Investments	12107	Formerly known as Investing, Securities and Investments courses emphasize the formulation of business and individual investment decisions by comparing and contrasting the investment qualities of cash, stock, bonds, and mutual funds. Students typically review annual reports, predict growth rates, and analyze trends. Stock market simulations are often incorporated into these courses.
Cost Accounting	12108	Cost Accounting courses introduce students to the accounting concepts of manufacturing systems. In addition to job order and process costing systems, these courses emphasize profit planning and control programs.

Income Tax Accounting	12109	Income Tax Accounting courses introduce students to and expand their knowledge of the fundamental accounting principles and procedures used in businesses through integrating and using accounting-related software and information systems. These courses focus on federal, state, and local business tax laws; business tax accounting methods; and the preparation of business tax forms.
Payroll Accounting	12110	Payroll Accounting courses introduce students to and expand their knowledge of the fundamental accounting principles and procedures related to payroll transactions for businesses. These courses typically emphasize computing wages, social security taxes, income tax withholding, unemployment taxes, and recording payroll transactions while providing students with experience in preparing all the necessary monthly, quarterly, and annual reports.
Particular Topics in Accounting	12111	These courses examine particular topics, such as auditing or non-profit accounting, rather than provide a general overview.
Finance—Independent Study	12147	Finance—Independent Study courses, often conducted with instructors as mentors, enable students to explore business finance-related topics of interest. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular specialization, to explore a topic in greater detail, or to develop more advanced skills.
Marketing Career Exploration	12151	Geared for students with an interest in marketing, sales, or small business operation, Marketing Career Exploration courses expose students to the opportunities available in retail, wholesale, advertising, and other occupational fields using marketing principles.

Marketing—Comprehensive	12152	Marketing—Comprehensive courses focus on the wide range of factors that influence the flow of goods and services from the producer to the consumer. Topics may include, but are not limited to, market research, the purchasing process, distribution systems, warehouse and inventory control, salesmanship, sales promotions, shoplifting and theft control, business management, and entrepreneurship. Human relations, computers, and economics are sometimes covered as well.
Marketing—Fashion	12153	Marketing—Fashion courses typically address basic knowledge of the apparel and accessories industry and the skills necessary for successful employment in apparel and accessory businesses. Students develop general marketing skills necessary for successful employment in fashion marketing, general marketing skills applicable to the apparel and accessories industry, and specialized skills unique to fashion marketing. Personal selling, sales promotion, purchasing, physical distribution, market planning, existing and emerging technology, and product/service management are usually included.
Marketing—Real Estate	12154	Marketing—Real Estate courses focus on the wide range of factors that influence the flow of goods and services from the producer to the consumer in the real estate industry. Topics may include purchasing, advertising, sales, human relations, management, and entrepreneurship but with particular attention to the real estate industry. Emphasis may be placed on financing, investment, ownership rights, ethics, and other real estate principles.
Marketing—Transportation	12155	Marketing—Transportation courses focus on the wide range of factors that influence the flow of goods and services from the producer to the consumer in the transportation industry. Topics may include purchasing and distribution systems, advertising, display and sales, management, and entrepreneurship with particular attention to the transportation industry. Emphasis may be placed on the identification and proper use of auto parts and accessories and the sales and service of new and used cars, vans, trucks, and related parts.

Marketing—Food/Beverage Industry	12156	Marketing—Food/Beverage Industry courses focus on the wide range of factors that influence the flow of goods and services from the producer to the consumer in the food and beverage industry. Topics may include purchasing and distribution systems, advertising, display and sales, management, and entrepreneurship. Emphasis may be placed on the unique characteristics and functions of the food and beverage service industry.
Marketing—Insurance	12157	Marketing—Insurance courses focus on the wide range of factors that influence the flow of goods and services from the producer to the consumer in the insurance industry. Topics may include purchasing and distribution systems, advertising, display and sales, management, and entrepreneurship. Emphasis may be placed on various categories of insurance including accident, health, life, marine, automobile, and causality insurance.
Marketing—Floristry	12158	Marketing—Floristry courses focus on the wide range of factors that influence the flow of goods and services from the producer to the consumer in the floral industry. Topics may include purchasing and distribution systems, advertising, display and sales, management, and entrepreneurship. Emphasis may be placed on the unique characteristics and functions of retail and wholesale floral operations.
Marketing—Hospitality/Tourism	12159	Marketing—Hospitality/Tourism courses focus on the wide range of factors that influence the flow of goods and services from the producer to the consumer in the travel, tourism, and lodging industries. Topics may include purchasing and distribution systems, advertising, display and sales, management, and entrepreneurship. Emphasis may be placed on the unique characteristics and functions of travel services and hotel/motel operations.

Marketing—Merchandising	12160	Marketing—Merchandising courses address marketing in a retail/e-tail environment focusing on the buying and merchandising of products. Content includes, but is not limited to, marketing information management (including marketing research), market planning, channel management, sales, promotion, product/service management, and pricing.
Retail Marketing	12161	Retail Marketing courses cover marketing principles and concepts related to the provision of goods or services directly to the consumer, emphasizing store operation, advertisement and display of goods, store security, human relations, and business management and ownership.
Internet Marketing	12162	Internet Marketing covers the principles and functions of marketing from the standpoint of conducting business on the internet. Typically, students develop such skills as using the internet as a marketing tool, conducting a marketing analysis via the internet, planning marketing support activities, managing an electronic marketing campaign, managing/owning a business via the internet, and analyzing the impact of the internet on global marketing.
Sports and Entertainment Marketing	12163	Sports and Entertainment Marketing courses provide students with a thorough understanding of fundamental marketing and management concepts and theories as they relate to the sports and entertainment industries. Content may address promotion of sports/events, licensing, sponsorship and endorsements, branding, marketing research, product development, pricing and distribution strategies, sales, event planning, and the role of existing and emerging technologies. These courses may also encourage students to develop job skills and explore career options.

Principles of Marketing	12164	Principles of Marketing courses offer students insight into the processes affecting the flow of goods and services from the producer to the consumer. Course content ranges considerably as general marketing principles such as purchasing, distribution, and sales are covered; however, a major emphasis is often placed on kinds of markets; market identification; product planning, packaging, and pricing; and business management.
Principles of Advertising	12165	Principles of Advertising courses expose students to the varied concepts underlying the promotion of products. The topics included in Principles of Advertising courses range considerably, but typically include the psychology of advertising, a study of various media, advertising planning and budgeting, and advertising layout and design principles. Course topics may also include an overview of commercial art and packaging.
Marketing Management	12166	Marketing Management courses typically cover the same scope of topics as Marketing— Comprehensive courses (purchasing and distribution systems; advertising and sales; and so on) but place a particular emphasis on business management and entrepreneurship, providing exposure to common techniques and problems of management.
Marketing—Other Specialization	12167	Marketing—Other Specialization courses focus on the wide range of factors that influence the flow of goods and services from the producer to the consumer with attention to a particular industry not specified above. Topics may include purchasing and distribution systems, promotion, advertising, display and sales, financing, management, entrepreneurship, market research, pricing, global marketing, human relations, economics, and emerging technologies. These courses may also cover specific topics related to the particular industry being covered.

Marketing Commodities	12168	Marketing —Commodities courses investigate the meaning and methods of marketing as related to agricultural commodities, products and services, and agricultural goods in domestic and international markets. Topics typically include appropriate market research; benefit/cost analysis of marketing; and methods of targeted agricultural marketing in domestic and international markets.
Social Media Marketing	12169	Social Media Marketing courses address social media as a marketing tool and emphasize social media tools, social media messages, and search engine optimization. Topics may include, but are not limited to, marketing information management (including marketing research), market planning, channel management, sales, promotion, product/service management, and pricing.
Integrated Marketing Applications	12195	Integrated Marketing Applications is an Application-level course. Through this course, student will be activity engaged in utilizing technology and technology applications in the design, production, and implementation of marketing strategies. Students will create print, multi-media, and electronic materials used in the marketing process. Application-level activities will be centered around: advertising, branding, graphic design, packaging, promotion, publicity, sponsorship, public relation, and sales promotion.
Marketing Research	12196	Marketing Research will focus on how to: (1) specify information needs and design a research study to meet those needs; (2) collect, analyze and use marketing research data to make effective marketing decisions; (3) communicate the research and findings and their implications to various publics.
Marketing—Independent Study	12197	Marketing—Independent Study courses, often conducted with instructors as mentors, enable students to explore marketing-related topics of interest. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular specialization, to explore a topic in greater detail, or to develop more advanced skills.

Principles of Selling	12202	Principles of Selling courses provide students with the knowledge and opportunity to develop in-depth sales competencies. Course content typically includes types of selling, steps in a sale, sales strategies, and interpersonal skills and techniques.
Sales—Independent Study	12247	Sales—Independent Study courses, often conducted with instructors as mentors, enable students to explore sales-related topics of interest. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular specialization, to explore a topic in greater detail, or to develop more advanced skills.
Business and Marketing—Independent Study	12997	Business and Marketing—Independent Study courses, often conducted with instructors or professionals as mentors, enable students to explore business or marketing-related topics of interest. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular specialization, to explore a topic in greater detail, or to develop more advanced skills.
Exploration of Manufacturing Occupations	13001	Exploration of Manufacturing Occupations courses introduce and expose students to the career opportunities pertaining to the processing and production of goods. Course topics vary and may include (but are not limited to) systems pertinent to the manufacturing process, properties of various raw materials, and the methods used to transform materials into consumer products. Course activities depend upon the careers being explored; course topics may include entrepreneurship, labor laws, economic impact, and customer service.
Manufacturing—Comprehensive	13002	Manufacturing—Comprehensive courses introduce students to the various methods used to process and transform materials. Processing techniques covered usually include casting, forming, separating, assembling, and finishing. The courses may also include an overview of management techniques in planning, organizing, and controlling various segments of the manufacturing process, including design, automation, engineering, production, and marketing.

Industrial Arts	13003	Industrial Arts courses expose students to the tools and equipment that they may encounter in manufacturing-related occupations and enable them to develop the skills they need to use these tools in various applications. Course topics typically include (but are not limited to) planning and design, electricity and electronics, materials properties and testing, basic materials processing, and power technology. These courses typically cover general safety and career exploration as well.
Industrial Safety/First Aid	13004	Industrial Safety/First Aid courses immerse students in the study of safe operating procedures related to various industrial environments, as well as more general training in emergency first aid and CPR. Course topics may include the importance of standard operation procedures, appropriate use of equipment, agencies and regulations related to occupational safety and hazard prevention, and the dangers of particular materials.
Material and Processes	13052	Material and Processes courses expose students to the tools, equipment, and processes that may be encountered in manufacturing-related occupations. In particular, these courses stress the analysis, testing, and processing of metals, plastics, woods, ceramics, and composite materials.
Metal and Wood Processing/Production	13053	Metal and Wood Processing/Production courses allow students to study the physical and chemical properties of metals, woods, and composites and to use these materials to construct usable products according to industry standards. These courses enable students to experience the process of translating an idea into a finished product, with instruction in planning, designing, selecting materials, and using tools and machines.
Wood Processing/Production	13054	Wood Processing/Production courses allow students to study the physical and chemical properties of woods and composites made from woods and to use these materials to construct usable products according to industry standards. These courses enable students to experience the process of translating an idea into a finished product, with instruction in planning, designing, selecting materials, and using tools and machines.

Metal Processing/Production	13055	Metal Processing/Production courses allow students to study the physical and chemical properties of metals and metal alloys and to use these materials to construct usable products according to industry standards. These courses enable students to experience the process of translating an idea into a finished product, with instruction in planning, designing, selecting materials, and using tools and machines.
Plastics Processing/Production	13056	Plastics Processing/Production courses allow students to study the physical and chemical properties of plastics and composites and to use these materials to construct usable products according to industry standards. These courses enable students to experience the process of translating an idea into a finished product, with instruction in planning, designing, selecting materials, and using tools and machines.
Ceramic Processing/Production	13057	Ceramic Processing/Production courses allow students to study the physical and chemical properties of ceramics and heat-resistant composites and to use these materials to construct usable products according to industry standards. These courses enable students to experience the process of translating an idea into a finished product, with instruction in planning, designing, selecting materials, and using tools and machines.
Particular Topics in Processing and Production	13058	These courses examine specific topics in processing and production, such as substance analysis, other than those already described.
Processing/Production—Independent Study	13097	Processing/Production—Independent Study courses, often conducted with instructors as mentors, enable students to explore topics of interest related to processing and production. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular specialization, to explore a topic in greater detail, or to develop more advanced skills.

Production Systems	13101	Production Systems courses provide students with knowledge and skills related to manufacturing technologies from conception through production. Although courses vary, students typically analyze markets, design and develop prototypes, plan a marketing or sales strategy, manage a production plan, and manufacture useful products. These courses may also explore the evolution and impact of technology on society's social, cultural, and economic systems and institutions.
Electro-Mechanical Systems	13102	Electro-Mechanical Systems courses provide students with instruction and experience in components and equipment used within a manufacturing environment powered by electricity and physical forces. Students gain an understanding of basic and industrial electricity, industrial electronics, and the automated systems used in the manufacturing process or within manufactured goods.
Product Development	13103	Product Development courses provide students with the opportunity to focus on one or more areas of industrial technology to design or redesign a product to solve a problem. Students may build prototypes and working models and may evaluate the product and process according to industry standards.
Production Systems—Independent Study	13147	Production Systems—Independent Study courses, often conducted with instructors as mentors, enable students to explore topics of interest related to manufacturing systems and/or research. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular specialization, to explore a topic in greater detail, or to develop more advanced skills.
Metalwork Occupations	13201	Metalwork Occupations courses introduce and expose students to the theoretical principles and career opportunities pertaining to planning, manufacturing, assembling, testing, and repairing of parts, mechanisms, and structures in which materials are cast, formed, treated, cut, fused, or otherwise processed in some fashion.

Metalworking	13202	Metalworking courses introduce students to the physical and chemical properties of various metals and the tools and equipment used to manipulate metal and form it into products. Students will develop planning, layout, and measurement skills; gain experience in cutting, bending, forging, casting, and/or welding metal; complete projects according to blueprints or other specifications; and may also learn how to polish and finish metals. Correct use of metalworking tools and equipment is stressed.
Machining	13203	Machining courses enable students to design and manufacture metal parts using various machine tools and equipment. Course content may include interpreting specifications using blueprints; preparing and using manual and computer numerical controlled (CNC) lathes and milling machines, shapers, and grinders with skill, safety, and precision; maintenance; developing part specifications; and selecting appropriate materials. Advanced course topics may include quality control; statistical process control; and application of measurements, metalworking theory, and properties of materials. Courses may prepare students for industry certification.
Particular Topics in Machining	13204	These courses examine specific topics related to machining, emphasizing a particular type of machine, tool, or procedure, or concentrating on a particular application of machining techniques.
Sheet Metal	13205	Sheet Metal courses expose students to the skills and information necessary to lay out, fabricate, assemble, install, maintain, and repair items and structures created from sheet metal components. Students learn the safe and efficient operation of various tools and typically gain skill in blueprint reading, welding, and finishing and polishing metals.
Particular Topics in Sheet Metal	13206	In these courses students gain knowledge and skills in particular aspects of sheet metal. Examples include individual courses in radial line development, triangulation fabrication, and so on.

Welding	13207	Welding courses enable students to gain knowledge of the physical and chemical properties, uses, and applications of various metals. Students gain skills in various processes used to join and cut metals (such as oxyacetylene, shielded metal, metal inert gas, and tungsten arc processes) and experience in identifying, selecting, and rating appropriate techniques. Students read and interpret blueprints in order to identify, select, and rate appropriate techniques. These courses may prepare students to pass relevant industry certifications.
Particular Topics in Welding	13208	In these courses students gain knowledge and skills in particular aspects of welding. Examples include individual courses in each of the following types of welding: gas metal, gas tungsten, and shielded metal and flux core arc welding.
Particular Topics in Metalwork	13209	In these courses students gain knowledge and skills in particular aspects of metalwork (such as foundry work or metallurgy) not otherwise described.
Machine Tool Technology 1a	13210	A comprehensive technical level course designed to provide students with the basic theories, equipment and skills needed to effectively operate machine equipment.
Metalwork—Independent Study	13247	Metalwork—Independent Study courses, often conducted with instructors as mentors, enable students to explore metalwork-related topics of interest. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular specialization, to explore a topic in greater detail, or to develop more advanced skills.
Appliance Repair	13301	Appliance Repair courses provide students with the knowledge and experience to repair, install, service, and inspect appliances such as stoves, refrigerators, washers, dryers, air conditioners, water heaters, and so on. Students gain an understanding of the mechanics and working systems of these appliances, the skills to read blueprints and specifications, and proficiency in using related tools and products.

Equipment Maintenance and Repair	13302	Equipment Maintenance and Repair courses prepare students to adjust, maintain, replace, and repair parts of machinery and to repair tools, equipment, and machines. The courses may have a general emphasis or may focus on a specific type of machinery or equipment related to a particular industry. Depending upon the intent, course topics may include electric, hydraulic, pneumatic, or mechanic systems; programmable logic and motor control devices, valves, and gates; or supplemental equipment such as fans, hoses, and pipes.
Industrial Maintenance	13303	Industrial Maintenance courses introduce students to the care and maintenance of a wide range of industrial equipment, including chain and gear drives, couplings, and fluid power equipment. Course topics may include lubricants and lubrication, the replacement of seals and bearings, and the correct application and selection of hand and power tools. Advanced courses may emphasize motor alignment using laser alignment, milling operations, turning operations, welding, technical drawings, and quality control.
Repair—Independent Study	13347	Repair—Independent Study courses, often conducted with instructors as mentors, enable students to explore topics related to repair. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular specialization, to explore a topic in greater detail, or to develop more advanced skills.
Manufacturing—Aide	13995	Manufacturing—Aide courses offer interested students the opportunity to assist instructors in preparing, organizing, or delivering course curricula. Students may provide tutorial or instructional assistance to other students.
Manufacturing—Independent Study	13997	Manufacturing—Independent Study courses, often conducted with instructors as mentors, enable students to explore topics related to manufacturing. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular specialization, to explore a topic in greater detail, or to develop more advanced skills.

Exploration of Health Care Occupations	14001	Exploration of Health Care Occupations courses expose students to the variety of opportunities available within the health care industry (e.g., such as nursing, therapy, dental care, administrative services, and lab technology). These courses provide experiences in several of these occupational clusters, along with information and knowledge related to the health care industry as a whole.
Health Care Occupations—Comprehensive	14002	Health Care Occupations—Comprehensive courses provide students with an orientation to the health care industry and help refine their health care-related knowledge and skills. Topics covered usually include (but are not limited to) an overview of health care delivery; patient care, including assessment of vital signs, body mechanics, and diet; anatomy and physiology; identification and use of medical equipment and supplies; medical terminology; hygiene and disease prevention; first aid and CPR procedures; laboratory procedures; and ethical and legal responsibilities.
Nursing	14051	Nursing courses place a special emphasis on the particular knowledge and skills required of nurses and/or nursing assistants and aides while covering general health care topics (i.e., patient care, anatomy and physiology, medical terminology, hygiene and disease prevention, first aid and CPR, and laboratory procedures). Topics covered typically include normal growth and development; bathing, feeding, dressing, and transporting patients; basic pharmacology; doctor, nurse, and patient relationships and roles; medical and professional ethics; death and dying; and care of various kinds of patients (e.g., chronically ill, children, new mothers, and so on).

Nursing—LPN	14052	<p>Covering the same scope of topics as Nursing courses, Nursing—LPN courses delve into more depth in order to prepare students for the state’s practical nurse licensing examination. Nursing—LPN courses offer the knowledge and experience needed to provide nursing care for patients of all ages, in various stages of sickness or health, and with a variety of disease conditions. Additional topics covered may include community health, nutrition, drug therapy and administration, and mental illness.</p>
Home Health Care	14053	<p>Home Health Care courses teach students how to care for individuals within their homes. Course content relates health care practices and procedures to the home environment, and typically includes patient care, comfort, and safety; anatomy and physiology; the prevention of disease and infection; nutrition and meal preparation; human relations; and first aid and CPR. Topics covered may also include therapy strategies, household management, and employability.</p>
Dental Science	14054	<p>Dental Science courses expose students to the tools, terminology, and procedures necessary for a career in the dental industry. Course content covers a wide range of topics and typically includes dental anatomy and terminology; the identification and use of dental equipment; dental pathologies and procedures; asepsis; dental laboratory procedures; emergency first aid; and the ethical and legal responsibilities of dental care workers. These courses often explore dental specialties and career options.</p>
Emergency Medical Technology	14055	<p>Emergency Medical Technology courses place a special emphasis on the knowledge and skills needed in medical emergencies. Topics typically include clearing airway obstructions, controlling bleeding, bandaging, methods for lifting and transporting injured persons, simple spinal immobilization, infection control, stabilizing fractures, and responding to cardiac arrest. The courses may also cover the legal and ethical responsibilities involved in dealing with medical emergencies. These courses may prepare students to obtain certification in Emergency Medical Response (EMR), CPR, First Aid, Incident Command System (ICS), and Wilderness First Responder.</p>

Surgical Technology	14056	Surgical Technology courses emphasize the care and needs of patients undergoing surgery while covering general health care topics (i.e., patient care, anatomy and physiology, medical terminology, hygiene and disease prevention, first aid and CPR, and laboratory procedures). In keeping with that focus, topics may include operation room materials, tools, and procedures; aseptic surgical techniques; preparation and handling of surgical instruments; efficiency in the operating room; and the roles of various medical personnel who are present during surgery.
Vision Care	14057	Vision Care courses expose students to the tools, terminology, and procedures necessary for a career in the optometric or optic field. Vision Care courses typically include the physics of light and refraction; the anatomy, physiology, and terminology associated with the eyes; identification and use of optometric and/or optical equipment; optical procedures; human relations; and the ethical and legal responsibilities of vision care workers.
Optometrics	14058	Optometrics courses provide students with the knowledge, ability, and experiences to prepare, assemble, and/or fit corrective lenses prescribed by a physician or optometrist. Topics covered may include layout and marking, cutting and chipping, edging and beveling, inspection, alignment, dispensing, and selection of eyewear.
Gerontology	14059	Gerontology courses provide students with knowledge and understanding of the processes of adult development and aging. Topics covered may include the study of the biological, economic, psychological, social, and health/fitness aspects of the aging process.
Physical Therapy	14060	Physical Therapy courses provide students with the knowledge and skills necessary to work with patients who need to achieve and maintain functional rehabilitation and to prevent malfunction or deformity. Topics covered typically include therapeutic exercises and activities (such as stretching and strengthening), how to train patients to perform the activities of daily living, the use of special equipment, and evaluation of patient progress.

Respiratory Therapy	14061	Respiratory Therapy courses provide students with the knowledge and skills necessary to work with patients who have breathing or other cardiopulmonary difficulties or disorders. Topics covered typically include identifying deficiencies and abnormalities of the cardiopulmonary system, understanding the various methods of therapies, and understanding how to use special equipment.
Sports Medicine	14062	Formerly known as Care of Athletes, Sports Medicine courses provide students with the knowledge and skills to understand and perform therapeutic tasks that would be designated by an athletic or fitness trainer. Topics covered may include taping and bandaging, proper use of protective padding, treatment modalities, anatomy and physiology, and medical terminology. Students may learn to measure cardiorespiratory endurance, muscular strength and endurance, flexibility, body composition, and blood pressure. More advanced topics may include injury assessment, the phases of healing, and the use of exercise and equipment to help in the reconditioning of injured athletes.
Particular Topics in Therapeutic Services	14063	These courses examine particular topics in medical therapeutic services other than those already described.
Sports Medicine I	14072	Sports Medicine I will provide students an overview of the specialized health care needed in the wide world of sports and physical activity. Students will learn what sports medicine is and the multidisciplinary approach to athletic health care. The course will also introduce students to basic body systems in addition to the physical and mental demands of physical activity at all levels. The students will be introduced to such things as kinesiology, bleeding and shock, the bones and soft tissue, the foot, ankle and lower leg, the knee, the hip and pelvis, the elbow, wrist and hand, the shoulder, the chest and abdomen, the head and face, the spine and lastly special considerations in athletes.

Sports Medicine II	14073	Sports Medicine II will provide students a hands-on approach to Athletic Training. Topics to be covered are central training room, the athletic training student-aid program, emergency preparedness, injury game plan, the pre-participation physical examination, rehabilitation and preseason conditioning, nutrition and the athlete, dietary supplements and performance enhancers, sports psychology, assessment and evaluation of sports injuries, therapeutic physical modalities, and proper taping and wrapping. The course allows students to do a series of clinical internships with medical professionals in the community pertaining to sports medicine. These internships are designed for students who have a serious interest in pursuing a career the sports medicine field.
Therapeutic Services—Independent Study	14097	Therapeutic Services—Independent Study courses, often conducted with instructors as mentors, enable students to explore topics of interest related to therapeutic services. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular specialization, to explore a topic in greater detail, or to develop more advanced skills.
Dental Laboratory Technology	14101	Dental Laboratory Technology courses expose students to the principals, tools, terminology, and procedures necessary for a career in a dental laboratory. These courses typically cover many of the same topics as Dental Science, but emphasize making mouth guards, taking impressions, creating various types of dental molds and models, and fabricating prostheses and dental appliances.
EKG Technology	14103	In EKG Technology courses, students acquire the knowledge and skills to perform electrocardiograph activities and learn about the cardiovascular system (including its function, diseases, and rhythms); EKG machinery; and the use of drugs and their effects. These courses usually include general health care topics as well, such as basic anatomy and physiology, patient care, first aid and CPR, identification and use of medical equipment, and medical terminology.

Phlebotomy	14104	In Phlebotomy courses, students acquire knowledge, skills, and experiences related to the drawing of blood and typically learn about such topics as infection control, sterilization practices, medical/hospital procedures and environments, diagnostic procedures, proper storage and handling of specimens, and the process of drawing blood.
Medical Coding and Transcription	14156	Medical Coding and Transcription courses introduce students to the International Classification of Diseases, Clinical Modification and its system of hospital codes for diagnoses and procedures. These courses provide opportunities for students to practice and develop skills in the use of transcription equipment and to gain familiarity with common formats of medical terminology and reports.
Health Informatics and Data Management	14157	Health Informatics and Data Management courses introduce students to automated information systems in the health care delivery system. These courses teach students terminology and essential concepts of health information systems and management of data, including the purpose, content, and structure of health data; numbering and filing systems; storage and retention methods; and the construction and design of forms, records, indexes, and registers. These courses may also examine data integrity, privacy/security issues, and the purposes of accreditation and regulatory standards in developing health record practice guidelines.
Diagnostic Services—Independent Study	14147	Diagnostic Services—Independent Study courses, often conducted with instructors as mentors, enable students to explore topics related to diagnostic services. Independent Study courses may provide students with an opportunity to expand their expertise in a particular specialization, to explore a topic in greater detail, or to develop more advanced skills.

Medical/Clerical Assisting	14151	Medical/Clerical Assisting courses enable students to develop knowledge and skills that combine the medical and clerical fields. Students typically develop skills such as patient exam preparation, assessment of vital signs, routine lab procedures, medical transcription, financial accounting, patient and insurance company billing, and record-keeping.
Pharmacy Assisting	14152	Pharmacy Assisting courses emphasize the knowledge and skills necessary to assist a pharmacist or pharmacy technician. Course topics and experiences enable students to understand medical terminology, keep and maintain records, label medications, perform computer patient billing, perform stock inventory, and order supplies. These courses also emphasize pharmaceutical classification, drug interactions, and interpersonal/communication skills.
Medical Office Procedures	14153	Medical Office Procedures courses expose students to clerical knowledge, abilities, and procedures as they apply to the medical field. These courses typically include (but are not limited to) topics such as medical transcription, medical insurance, financial accounting, scheduling, and patient record-keeping. Medical terminology and routine medical procedures are covered to provide a context for clerical duties.
Medical Terminology	14154	In Medical Terminology courses, students learn how to identify medical terms by analyzing their components. These courses emphasize defining medical prefixes, root words, suffixes, and abbreviations. The primary focus is on developing both oral and written skills in the language used to communicate within health care professions.
Particular Topics in Health Information	14155	These courses examine particular topics in health Information other than those already described.

Medical Coding and Transcription	14156	Medical Coding and Transcription courses introduce students to the International Classification of Diseases, Clinical Modification and its system of hospital codes for diagnoses and procedures. These courses provide opportunities for students to practice and develop skills in the use of transcription equipment and to gain familiarity with common formats of medical terminology and reports.
Health Information—Independent Study	14197	Health Information—Independent Study courses, often conducted with instructors as mentors, enable students to explore topics related to health information systems. Independent Study courses may provide students with an opportunity to expand their expertise in a particular specialization, to explore a topic in greater detail, or to develop more advanced skills.
Central Service Technology	14201	Central Service Technology courses provide students with knowledge and skills related to the procurement, handling, storage, and distribution of sterile goods and equipment. Course components usually include quality assurance, infection control and isolation techniques, medical terminology and processes, decontamination and sterilization, microbiology, and chemistry.
Health Support Services	14202	Health Support Services courses provide students with knowledge and skills to be used in activities that support patients' primary health care, such as counseling, health education, disease management, and risk reduction. Because support services can be widely defined, course topics typically also include general health care, such as anatomy and physiology, medical terminology, first aid and CPR procedures, and ethical and legal responsibilities.
Health Unit Coordination	14203	Health Unit Coordination courses provide students with instruction and experiences so that they can manage components of nonpatient care activities in health care facilities. Topics covered usually include medical terminology, transcription, and general reception duties and responsibilities; recordkeeping; and stocking medical and office supplies and equipment.
Particular Topics in Support Services	14204	These courses examine particular topics in health support services other than those described.

Health Support Services—Independent Study	14247	Health Support Services—Independent Study courses, often conducted with instructors as mentors, enable students to explore topics related to health support services. Independent Study courses may provide students with an opportunity to expand their expertise in a particular specialization, to explore a topic in greater detail, or to develop more advanced skills.
Health Science	14251	Health Science courses integrate chemistry, microbiology, chemical reactions, disease processes, growth and development, and genetics with anatomy and physiology of the body systems. Typically, these courses reinforce science, mathematics, communications, health, and social studies principles and relate them to health care.
Biotechnology	14252	Biotechnology courses involve the study of the bioprocesses of organisms, cells, and/or their components and enable students to use this knowledge to produce or refine products, procedures, and techniques. Course topics typically include laboratory measurement, monitoring, and calculation; growth and reproduction; chemistry and biology of living systems; quantitative problem-solving; data acquisition and display; and ethics. Advanced topics may include elements of biochemistry, genetics, and protein purification techniques.
Particular Topics in Health Sciences	14254	These courses examine particular topics in health sciences other than those already described.
Health Sciences—Independent Study	14297	Health Sciences—Independent Study courses, often conducted with instructors as mentors, enable students to explore health-related topics of interest. Independent Study courses may provide students with an opportunity to expand their expertise in a particular specialization, to explore a topic in greater detail, or to develop more advanced skills.
Health Care Sciences—Independent Study	14997	Health Care Sciences—Independent Study courses, often conducted with instructors as mentors, enable students to explore health-related topics of interest. Independent Study courses may provide students with an opportunity to expand their expertise in a particular specialization, to explore a topic in greater detail, or to develop more advanced skills.

Exploration of Public Service Careers	15001	Exploration of Public Service Careers courses expose students to the duties, responsibilities, requirements, and career opportunities within public service. Course topics vary and may include, but are not limited to, public safety, police, fire, emergency services, law, forensics, corrections, fire/EMS and homeland security issues. Course activities depend upon the career clusters that students explore.
Criminal Justice	15051	Criminal Justice courses train students to understand and apply the principles and procedures essential to the overall U.S. criminal justice system. Course topics vary and may include, but are not limited to, structure, history and philosophy of the federal, state, county, and municipal court systems; judicial appointment processes; arrest-to-sentencing sequences; laboratory, forensic, and trial procedure; probation and parole; state and federal correctional facilities; and system interrelationships with law enforcement agencies.
Corrections	15052	Corrections courses provide instruction regarding the principles and techniques used by institutions that incarcerate, rehabilitate, and monitor people accused or convicted of crimes. As applicable, students may prepare for certification as a corrections officer or deputy. Course topics vary and may include, but are not limited to, infection control in corrections, taking fingerprints, self-defense pressure points, organization of correctional systems, and current and future issues in corrections.
Particular Topics in Law Enforcement	15053	These courses examine specific topics related to law enforcement (such as juvenile justice), rather than provide a general study of the field.

Law Enforcement	15054	Law Enforcement courses provide an overview of the history, organization, and functions of local, state, and federal law enforcement and foundational skills necessary to fulfill law enforcement duties. Course topics vary and may include, but are not limited to, the role of constitutional law, the United States legal system, criminal law, law enforcement terminology, physical fitness, self-defense, and skill necessary to fulfill law enforcement duties. Advanced courses may explore specific types of crimes, ethical and legal responsibilities, crime scene investigations, emergency medical procedures, use of force, and prisoner transport.
Crime Scene Management	15056	Crime Scene Management courses provide the skills and knowledge necessary for criminalistics - the securing, investigating, and processing of a crime scene. Topics may include, but are not limited to, evidence collection and preservation, finger printing, sketching, securing and photographing the crime scene, and chain of custody.
Criminal Law and Procedures	15057	Criminal Law and Procedures courses provide students with knowledge and skills related to understanding criminal law, constitutional amendments, and due process. Course content may include specific types of crimes, such as vehicle crimes, personal crimes, cyber crimes, drug crimes, and crimes related to child pornography or pedophiles.
Ethics in Criminal Justice	15058	Ethics in Criminal Justice courses cover ethical standards and codes of professional behavior for police officers and others placed in positions of public trust. Topics may include use of force, gratuities, intra- and inter-agency conduct, integrity, ethical necessity of due process, and on-duty and off-duty conduct.
Law Enforcement—Independent Study	15097	Law Enforcement—Independent Study courses, often conducted with instructors as mentors, enable students to explore topics of interest related to law enforcement. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular application, to explore a topic in greater detail, or to develop more advanced skills.

Public Safety	15101	Public Safety courses introduce students to the field of public safety and extend their knowledge and skills pertaining to the safety and security of homes, workplaces, and the community. These courses cover such topics as policing, law enforcement, emergency service, and private security and corrections and may cover all or a subset of these services.
Security Services	15102	Security Services courses provide instruction regarding the safety and security of (1) people, (2) personal property, (3) intellectual property, and (4) buildings and facilities.
Particular Topics in Security	15103	These courses examine specific topics related to security and protective services, rather than provide a general study.
Public Safety Telecommunications	15104	Public Safety Telecommunications courses provide students with the skills and knowledge necessary to obtain national certification in Public Safety Telecommunications and/or employment as a 911 telecommunicator. Course content may include, but is not limited to, understanding standard federal, state, and local telecommunication operating procedures; functions, terminology, and types of telecommunication equipment; malfunctions and maintenance agreements; proper and correct telephone and dispatching procedures and techniques; emergency situations and operating procedures; and emergency medical dispatch procedures.
Security and Protection—Independent Study	15147	Security and Protection—Independent Study courses, often conducted with instructors as mentors, enable students to explore topics of interest related the security and protection of the public. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular application, to explore a topic in greater detail, or to develop more advanced skills.

Fire Science	15151	Fire Science courses introduce students to the field of fire prevention and control and enable them to extend their knowledge through the use of chemical, physical, and engineering principles to understand factors involved in fires. Course topics typically include the chemistry of combustion, factors that influence fire (such as structural design and meteorology), and safety procedures.
Fire Fighting	15152	Fire Fighting courses offer students the opportunity to learn fire prevention and control under controlled conditions. Typically, students learn about the organization, rules, requirements, and regulations of fire departments; study and practice the tools and techniques used by firefighters to control or extinguish fires; and examine the behavior of fires. These courses also usually include emergency medical procedures and present fire investigation techniques.
Particular Topics in Fire Management	15153	These courses examine specific topics related to fire management (such as hazardous materials handling), rather than provide a general study of the field.
Fire Management—Independent Study	15197	Fire Management—Independent Study courses, often conducted with instructors as mentors, enable students to explore topics of interest related fire management. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular application, to explore a topic in greater detail, or to develop more advanced skills.
Public Administration	15201	Public Administration courses provide an overview of the structure, roles, and duties of public governments and associated agencies. These courses explore the foundation and evolution of the public service sector, issues related to the provision of services by governmental bodies, and the missions and constraints of various departments within local and state, and the federal government. In addition, students may explore a particular public administration topic (such as the tax base and structure, the legislative process, selection of public servants, resource management, and so on) in greater detail.

Community Protection	15202	Community Protection courses provide students with information regarding the personnel and agencies concerned with protection of the home, city, state, and nation. Topics covered typically include civil defense; homeland security; disaster, terrorism, and emergency preparedness; crime prevention; pollution control; fire prevention and control; legal and social systems and principles; and public health.
Public Policy	15203	Public Policy courses provide students with the opportunity to design, propose, and analyze programs and policies implemented by government agencies. Activities typically include identifying social issues and problems, generating recommendations, using data to quantify the extent of a problem or evaluate its solution, communicating ideas and findings, and understanding decision-making processes.
Government Service—Independent Study	15247	Government Service—Independent Study courses, often conducted with instructors as mentors, enable students to explore topics of interest related the provision of government services. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular application, to explore a topic in greater detail, or to develop more advanced skills.
Public, Protective, and Government Service—Independent Study	15997	Public, Protective, and Government Service—Independent Study courses, often conducted with instructors as mentors, enable students to explore topics of interest related to public, protective, and government service. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular application, to explore a topic in greater detail, or to develop more advanced skills.