

MATH 116 Technical Mathematics I 3 Credits

Provides technical mathematical core material so that the student gains practical problem solving experience. May include arithmetic operation, integers, exponents, scientific notation, algebraic expressions, equations, metric system, trigonometry, and logarithms. This course satisfies the general education requirement for occupational/technical AAS degree. It is recommended that students have completed prerequisites within two years of enrolling in this course.

MATH 116E Technical Mathematics Expanded 3-5 Credits

Provides technical mathematical core material so that the student gains practical problem solving experience. May include arithmetic operation, integers, exponents, scientific notation, algebraic expressions, equations, metric system, trigonometry, and logarithms. This course satisfies the general education requirement for occupational/technical AAS degree.

MATH 120 Fund of College Math 3 Credits

Includes set theory, logic, consumer mathematics, measurement, geometry, probability, and statistics. Course is broad in scope, emphasizing applications. It is recommended that students have completed prerequisites within two years of enrolling in this course.

MATH 120E Fund of College Math Expanded 3 Credits

Fundamentals of College Mathematics with Corequisite Support: Includes real numbers, consumer mathematics, variation, functions, relations, graphs, geometry, probability, and statistics. Course is broad in scope, emphasizing applications. Fulfills the lower-division mathematics requirement for a Bachelor of Arts Degree. Satisfies mathematics requirement for baccalaureate degrees.

MATH 126 Precalculus I 3 Credits

A third course in algebra that stresses polynomial, quadratic, rational, exponential, and logarithmic functions, including their graphs and applications; complex numbers; systems of equations; and basic operations with matrices and determinants, including Cramer's rule. It is recommended that students have completed prerequisites within two years of enrolling in this course.

MATH 126E Precalculus I Expanded 3 Credits

Precalculus I Expanded with Co-requisite support: Includes equations, relations, functions, graphing; polynomial, rational, exponential, logarithmic, and circular functions with applications; coordinate geometry of lines and conics; analytic trigonometry; matrices and determinants; and binomial theorem. It is recommended that students have completed prerequisites within two years of enrolling in this course.

STAT 152 Intro to Statistics 3 Credits

Includes descriptive statistics, probability models, random variables, statistical estimation and hypothesis testing, linear regression analysis, and other topics. Designed to show the dependence of statistics on probability. It is recommended that students have completed prerequisites within two years of enrolling in this course.

Science (one course required)

ANTH 102 Physical Anthropology 3 Credits

Introduction to the study of how humans, Homo sapiens, have emerged as a species and come to dominate the planet by examining processes of human biological and cultural evolution. Topics include inheritance, the emergence of primates, fossil hominids, the development of technology, and biological variability among modern humans. Satisfies general education science.

AST 101 General Astronomy 3 Credits

An introductory examination of the solar system, stellar systems, and stellar and galactic evolution according to currently accepted concepts. Introduces astronomical instruments and light theory.

BIOL 100 General Biology/Non Major 3 Credits

Basic biological concepts, interpretation and application of scientific methods, and effects of biological advances on society. Core curriculum science course; cannot be used for credit toward field of concentration in biology.

BIOL 190 Intro Cell/Molecular Biology 4 Credits

Structure and function of cells. Major molecules of life; composition and physiology of cellular organelles; cell metabolism, reproduction, motility, and gene function of both plant and animal cells. Required for biology majors. Concurrent enrollment in a corresponding lab section is required for this course.

CHEM 100 Molecules/Life Modrn Wrld 3 Credits

Introduction to chemistry in its many forms and applications, physical and organic, with consideration of environmental and social issues. Includes laboratory activities.

CHEM 121 General Chemistry I 4 Credits

Fundamentals of chemistry including reaction stoichiometry, atomic structure, chemical bonding, molecular structure, states of matter, and thermochemistry.

ENV 100 Humans and the Environment 3 Credits

Introduction to the relationship of man and his environment. Current thinking and research concerning the impact of industrialization and urbanization on environmental quality, including the population explosion; the potential decline of the affluent society by the depletion of natural resources; the pollution of air, land surface, and water; and the public agencies and policies designed to solve environmental problems.

GEOG 103 Physical Geog Earth Environmnt 3 Credits

Physical elements of the earth's natural features and their significance to man. Topics include earth form and motion, landforms, weather, climate, vegetation, and soils. Four laboratory experiences required.

GEOG 101 Exploring Planet Earth 3-4 Credits

Fundamental principles of geology including tectonic and surficial processes, oceans, atmosphere, environmental applications, and resources. Includes a laboratory component.

GEOL 132 Rocks and Minerals 3 Credits

An introduction to the more common or important minerals and rocks. Emphasizes the conditions of formation and hand sample identification. The economic value of minerals and rocks is presented.

NUTR 121 Human Nutrition 3 Credits

An introductory nutrition course for the beginning student. Course will center on the major nutrients and their roles in maintaining good health. Students will learn to recognize well-balanced diets and acquire shopping tips and preparation techniques for optimum utilization of food dollars. Class includes four required labs.

PHYS 100 Introductory Physics 3 Credits

A concise treatment of the basic principles of physics. Includes mechanics, matter, electricity, magnetism, heat, sound, light, relativity, and nuclear physics.

PHYS 107 Technical Physics I 3 Credits

Investigates traditional topics of physics. Topics include mechanics, electricity, basic solid state components, optics, gases, hydraulics, fluids, and thermodynamics. This course provides a basic understanding of how physical systems are related and their technical applications. Hands-on labs, demonstrations, and calculations are an integral part of the course.

PHYS 151 Gen Physics I 4 Credits

Primarily for students in arts and science. Topics include kinematics, energy and momentum conservation, rotational dynamics, thermodynamics, fluids, harmonic motion, and sound. Laboratory experiments illustrate many of these fundamental principles.

U.S. and Nevada Constitutions: HIST 101 and HIST 102 or PSC 101

HIST 101 U.S. History to 1877 3 Credits

Survey of U.S. political, social, economic, diplomatic, and cultural development from colonial times through Reconstruction. When taken with HIST 102 satisfies the GBC General Education American Constitutions and Institutions Requirement. HIST 101 and 102 need not be taken sequentially. Either class may be taken alone.

HIST 102 U.S. History Since 1877 3 Credits

Survey of U.S. political, social, economic, diplomatic, and cultural development from 1877 to the present. Course satisfies the Nevada Constitution Requirement. When taken with HIST 101 satisfies the GBC General Education American Constitutions and Institutions Requirement. Can be used to satisfy the Nevada Constitution Requirement for out-of-state transfer students who have previously satisfied the United States Constitution Requirement. HIST 101 and 102 need not be taken sequentially. Either class may be taken alone.

PSC 101 Intro American Politics 3 Credits

A survey of United States, national, state, and local governments with emphasis on the cultural aspects of the governing process. Satisfies the legislative requirement for the United States and Nevada Constitutions.

Human Relations (one course required)

BUS 110 Human Relations Employmnt 1-3 Credits

Introduces students to the principles and skills of effective communication in business and professional settings. It provides information on how to communicate with superiors, co-workers, subordinates, clients, and customers. Three-credit course includes a computation component. Repeatable up to a total of three credits.

MGT 283 Intro Human Resource Mgt 3 Credits

Duties and responsibilities of personnel management. Areas covered include employee needs, human relationships, orienting and training employees, benefit programs, and economics of supervision.

HMS 200 Ethics in Human Services 3 Credits

Real life applications for personal and professional boundaries, beliefs, ethics, values, morals, and codes of conduct in human relationships using ethical decision-making, problem-solving, and critical-thinking activities are emphasized. This course may be repeated up to three times for continuing education credit. (Check with individual licensing boards prior to registering).

PSY 208 Psy of Human Relations 3 Credits

Explores the relationships between human beings and assists in the development of interpersonal communication skills which can be used personally and professionally.

Humanities or Fine Arts (one course required)

ART 100 Visual Foundations 3 Credits

A beginning art class that includes a survey of art and the basic components of design. The class explores visual concepts as they relate to the history of art through class presentations, discussions, and a variety of media. Students should plan for three hours of studio work outside the class.

ART 101 Drawing I 3 Credits

A disciplined foundation in drawing concepts based on visual observation skills.

ART 107 Design Fundmntls I (2-D) 3 Credits

Explores the fundamentals of design using various media focusing on 2-D design.

ART 160	Art Appreciation	3 Credits
Introduction to the visual arts, illustrating the place of art in its social and cultural setting.		
ART 260	Survey of Art History I	3 Credits
Presentation of the historical context of major and minor works of art from the ancient world to the Renaissance, art analysis, and criticism.		
ART 261	Survey of Art History II	3 Credits
A continuation of Survey of Art History I presenting major and minor works of art from the Renaissance to the present, art analysis, and criticism.		
ENG 203	Intro to Literary Study	3 Credits
Introduction to the elements of fiction, poetry, and drama used in the analysis of literature.		
ENG 205	Intro to Creative Writing	3 Credits
A creative writing course designed to introduce students to the production of fiction and poetry.		
ENG 223	Themes of Literature	3 Credits
Themes and ideas significant in literature.		
FIS 100	Introduction to Film	3 Credits
Introduction to the historical development of film as art. Considers the development of cinematic techniques (i.e., cinematography, editing, sound, etc.), cinematic genres (i.e., the western, romantic comedy, etc.) and narrative elements (i.e., plot, character, conflict, etc.) as exemplified by the work of major American and international directors.		
FREN 111	First Year French I	3-4 Credits
Development of language skills through practice in listening, speaking, reading, writing, and structural analysis. Language practice required.		
FREN 112	First Year French II	3-4 Credits
A continuation of FREN 111. Language practice required.		
HIST 208	World History I	3 Credits
Survey of world civilizations to 1600. Examines societies, cultures, and issues relative to Africa, the Americas, Asia, Europe, the Middle East and Oceania.		
HIST 209	World History II	3 Credits
Survey of world civilizations since 1600. Examines historical societies, cultures, and issues relative to Africa, the Americas, Asia, Europe, the Middle East, and Oceania.		
HUM 101	Intro to Humanities I	3 Credits
An introduction to humanities through a study of seven major arts including film, drama, music, literature, painting, sculpture, and architecture. Each of these arts is considered from the perspective of historical development, the elements used in creating works of art, meaning and form, and criticism and critical evaluation.		
HUM 111	Gateway to the Humanities	3 Credits
Through five distinct modules, students discover answers to all of the following questions: What attributes are irreducibly human - that is, independent of gender, race, culture, society, nationality, or philosophy? How do human beings relate to one another? How do we humans express ourselves? In what ways do we limit ourselves? The student will explore: philosophy/religion; language/linguistics; history; art and architecture; law and ethics; and literature/performance. Students will seek out applications of the humanities to chosen disciplines.		
HUM 210	Communicating Diversity	3 Credits
Communicating Diversity is a lower division course designed to familiarize students with the fundamentals of diversity and how those are expressed through communication. Students will develop a deep understanding of the way in which we communicate race, gender, class, sexual orientation, nationality, religion, and physical/mental ability and how it impacts our daily lives. This course will take an intersectional approach to understanding diversity and seek communication strategies for inclusivity. Emphasis will be placed on defining and developing the critical thinking skills necessary to push past oppression, marginalization, and other issues centralized around diverse populations. Students will be encouraged to investigate and discover diversity issues, solutions, and concepts at the local and global level using case studies, current events, and other significant moments in history.		
MUS 101	Music Fundamentals	3 Credits
Notation, terminology, intervals, and scales. Designed to furnish a foundation for musicianship. Recommended for teachers in public schools and all others desiring a basic music background.		
MUS 121	Music Appreciation	3 Credits
The historical and cultural background of music and origins to the twentieth century.		
MUS 125	History of Rock Music	3 Credits
The history and stylistic development of rock from its origins, through transitions, and subsequent revolutions.		
PHIL 101	Intro to Philosophy	3 Credits
Basic problems in different areas of philosophy such as ethics, political theory, metaphysics, and epistemology.		
PHIL 102	Critical Thinking	3 Credits
Covers non-symbolic introduction to logical thinking in everyday life, law, politics, science, advertising; common fallacies; and the uses of language, including techniques of persuasion.		

PHIL 135 Introduction to Ethics 3 Credits

Introduction to Ethics: critical introduction to classical and modern ethical theories such as utilitarianism, deontology, and virtue ethics. Emphasis throughout on applying the theories in various contexts such as social, political, or interpersonal. The ultimate goal will be to allow students to clarify their own thinking and positions on important ethical issues confronting society today.

SPAN 111 First Year Spanish I 3 Credits

Development of language skills through practice in listening, speaking, reading, writing, and structural analysis. Language practice required.

SPAN 112 First Yr Spanish II 3 Credits

A continuation of SPAN 111. Language practice required.

SPAN 211 Second Year Spanish I 3 Credits

Considers structural review, conversation and writing, and readings in modern literature.

THTR 100 Introduction to Theatre 3 Credits

A survey of the basic principles, facts, and theories providing an understanding of the art of theatre. Course also includes a special focus on the practical technical aspects of the theatre and on live theatre experiences.

THTR 102 Introduction to Stage Voice 3 Credits

Fundamentals of voice production including relaxation, alignment, breath, resonance, and articulation. Vocal health and the physiological aspects of voice/speech production. Students will complete performance projects.

THTR 121 Stage Makeup 3 Credits

This course focuses on the history of makeup and basic approaches to applying make-up for the stage and screen. Make-up supplies will be studied, as well as techniques for corrective, old-age, character, stylized, and special effects makeup.

THTR 204 Theatre Technology I 3 Credits

Lecture and discussion encompassing the philosophy and techniques of technical theatre.

WELD 200 Metal Art 3 Credits

This course is designed to give the student the basic understanding of two dimensional 2D and three-dimensional 3D metal art. Also covered in this course we will discuss different Cutting, Welding and metal finishing techniques that are used in this discipline as it relates to metal art.

Technology (embedded in manufacturing machining Curriculum)

MTT 100 Measurement for Machinists 3 Credits

Measurement for Machinists will teach the skills necessary to accurately measure parts and fixtures for the manufacturing industry. Skills will focus on micrometers, calipers, CMM, optical comparators and various other measurement tools.

Program Requirements

CADD 245 Solid Model/Parametric Design 3 Credits

Provides training and instruction in using parametric solid modeling software to create solid model parts, assemblies and working drawings. Students will have the opportunity to acquire the CSWA certificate for Solidworks.

MTT 100 Measurement for Machinists 3 Credits

Measurement for Machinists will teach the skills necessary to accurately measure parts and fixtures for the manufacturing industry. Skills will focus on micrometers, calipers, CMM, optical comparators and various other measurement tools.

MTT 105 Machine Shop I 3 Credits

This course introduces basic machine shop skills which include lathe operation, mill operation, metal removal speeds and feeds, precision measuring techniques, layout methods, band saw and drill press operations, and exposure to the science of heat-treating of metals. Shop safety and etiquette will be stressed.

MTT 106 Machine Shop Practice I 2 Credits

Expands the student's manual skills by putting into practice the theories, and user skills introduced in MTT 105. The emphasis will be geared to a more practical, hands-on experience through the use of lathes, layout techniques, vertical and horizontal band saws, measuring instruments and vertical mill work. Shop safety and cleanup are always stressed.

MTT 110 Machine Shop II 3 Credits

Expands skills introduced in MTT 105 to an intermediate level and introduces further skills which include advanced manual milling, advanced manual turning, drill sharpening, speed feeds, grinding and some production methods.

MTT 111 Machine Shop Practice II 2 Credits

Further develops student's manual skills by putting into practice the theories and user skills introduced in MTT 110. The emphasis will be a more practical, hands-on experience through the use of advanced manual mill work, layout techniques, vertical and horizontal band saws, grinding, measuring instruments and advanced manual turning. Shop safety and cleanup are always stressed.

MTT 230 Computer Numerical Control I 1-4 Credits

Covers computer numerical control (CNC) lathe operations, program format, and machine setup, G & M codes, control functions, the letter address system, and math issues related to CNC operation.

MTT 232 Computer Numerical Control II 1-4 Credits

Offers the student additional practical experience for development of skills with additional information and exposure to more complex applications of programming, mirror imaging, polar coordinates, tool compensation, threading and computer integrated manufacturing.

MTT 234 Computer Numerical Control III 1-4 Credits

This course covers the advanced programming concepts related to CNC Mill/Turning centers and synchronized 4 and 5 axis mills. Mill/Turn and 4 and 5 axis topics include program format, machine set-up, related G & M codes, live tooling, and indexing devices. Students will program, set-up, and produce a variety of precision machined projects.

MTT 291 CNC Practice 1-6 Credits

This course allows for the further development of computer aided manufacturing and/or CNC skills with hands-on instruction related to the design and production of machined parts using CAD/CAM software, CNC milling machines, and CNC turning centers. Students will plan, program, set-up, and produce a variety of precision machined projects. This course is to be considered lab time for MTT 232, and MTT 292.

MTT 292 Computer Aided Manufacturing I 1-4 Credits

This course provides the student with the essential concepts and techniques that are required for successful creation of two-dimensional part geometry, generation and verification of 3 axis toolpath models, as well as post processing of 3 axis NC codes within a computer-aided manufacturing (CAM) system.

MTT 293 Computer Aid Manufacturing II 1-4 Credits

This course is a continuation of MTT 292 with the addition of simultaneous 4 and 5 axis motion control and provides the student with the essential concepts and techniques that are required for successful creation of 4 and 5 axis toolpath models, as well as, post processing of 4 and 5 axis NC codes within a computer-aided manufacturing (CAM) system.

MTT 296 CNC Practice II 1-4 Credits

This course allows for the further development of CNC skills with hands-on instruction related to the design and production of machined parts using CAD/CAM software, CNC milling machines, and CNC turning centers. Students will plan, program, set-up, and produce a variety of precision machined projects. This course is to be considered lab time for MTT 293 and/or MTT 234.

Suggested Course Sequence

1st Semester - Fall

Course Credits English/Communications* 3-5 Mathematics* 3 MTT 100 3 MTT 105 3 MTT 106 2 TOTAL 14-16 *Choose with advisor

2nd Semester - Spring

Course Credits CADD 245 3 English/Communications* 3 MTT 110 3 MTT 111 2 MTT 230 3 MTT 291 4 TOTAL 18 *Choose with advisor

3rd Semester - Fall

Course Credits Human Relations* 3 MTT 232 3 MTT 292 3 MTT 296 2 U.S and Nevada Constitution* 3-6 TOTAL 14 *Choose with advisor

4th Semester - Spring

Course Credits Humanities/Fine Arts* 3 MTT 234 3 MTT 293 3 MTT 296 2 Science* 3 TOTAL 14 *Choose with advisor