

Oral Communication

SPCH 219 Speech 3 Credits (3,0)

This course is a continuation of the study of communication and communication theory, with an emphasis on overcoming communication apprehension, developing listening skills, mastering oral performance and writing about communication. Individual sections may focus on public speaking, group discussion, oral interpretation or interpersonal communication.

Written Communication

ENGL 123 English Composition 3 Credits (3,0)

This course focuses on the principles of using writing for thinking, as well as a tool for expressing ideas. It addresses the composing process, research and documentation, and rhetorical strategies for various audiences and purposes. Students develop their communicative, evaluative, critical thinking, and research writing abilities. Prerequisite: Qualifying score on the ERAU English Placement Examination or course listed.

Prerequisites: [ENGL 106](#).

ENGL 143 Studies in Rhetorical Theory 3 Credits (3,0)

This course is a broad survey of speculation concerning the nature and techniques of persuasion, this course is a continuation of [ENGL 123](#). This writing-intensive course will focus on enduring issues in the study of rhetoric: the value of such a study, the nature of audiences, the most effective techniques, and the continual re-framing of these issues to meet changing circumstances.

Prerequisites: [ENGL 123](#).

Mathematics

MATH 111 Pre-calculus for Aviation 3 Credits (3,0)

This is a pre-calculus course designed for the student aviation. Topics include a review of the fundamentals of algebra; linear equations and inequalities, quadratic equations; variation; polynomial, rational, exponential, logarithmic and trigonometric functions; radian measures; right triangle solutions, vectors and the laws of sines and cosines. Prerequisite: Qualifying score on the ERAU Mathematics Placement Examination or course listed.

Prerequisites: [MATH 106](#).

MATH 112 Applied Calculus for Aviation 3 Credits (3,0)

This course presents basic calculus, designed for the student of aviation. Topics include differentiation and integration of algebraic functions; applications to velocity, acceleration, area, curve sketching, and computation of extreme values.

Prerequisites: [MATH 111](#) or [MATH 140](#) or qualifying score on the mathematics skills assessment.

MATH 140 College Algebra 3 Credits (3,0)

This course focuses on fundamentals of exponents, radicals, linear and quadratic equations, inequalities, functions, graphing techniques, and complex numbers. It includes an introduction to

function, curve sketching, elementary theory of equations, sequences and series, matrix algebra and systems of equations, linear, polynomial, logarithmic, exponential, inverse and composite functions, variation, and systems of equations. Prerequisite: Qualifying score on the ERAU Mathematics Placement Examination or course listed.

Prerequisites: [MATH 106](#).

MATH 142 Trigonometry 3 Credits (3,0)

Students will be introduced to trigonometric functions and their graphs; identities; radian measure with applications; compound, half and double angle identities; solving elementary trigonometric equations, right and oblique triangles, law of sines and cosines; inverse trigonometric functions; vectors and trigonometric form of a complex number.

Prerequisites: [MATH 111](#) or [MATH 140](#) or qualifying score on the mathematics skills assessment.

MATH 143 Precalculus Essentials 3 Credits (3,0)

This is a precalculus course with an emphasis on functions and their graphs, including polynomial, rational, exponential, logarithmic, and trigonometric; radian measure; trigonometric identities and equations; vectors, parametric and polar curves; sequences and series; binomial theorem. NOTE: This course is open only to Engineering degree students.

Prerequisites: [MATH 106](#) or [MATH 111](#) or [MATH 140](#) or qualifying score on the mathematics skills assessment.

MATH 241 Calculus and Analytic Geometry I 4 Credits (4,0)

This course is a study of graphs and functions; limits and continuity; differentiation and integration of algebraic and elementary trigonometric functions; applications of first and second derivatives.

Prerequisites: [MATH 142](#) or [MATH 143](#) or qualifying score on the mathematics skills assessment.

MATH 242 Calculus and Analytic Geometry II 4 Credits (4,0)

This course is a study of differentiation and integration of transcendental functions; special integration techniques; polar coordinates; applications of the definite integral; numerical methods.

Prerequisites: [MATH 241](#).

MATH 243 Calculus and Analytic Geometry III 4 Credits (4,0)

This course is a study of solid analytic geometry; vector functions in three dimensions; elements of infinite series; partial differentiation; directional derivative and gradient; multiple integrals.

Prerequisites: [MATH 242](#).

STAT 211 Statistics with Aviation Applications 3 Credits (3,0)

This course is a study of basic descriptive and inferential statistics. Topics include types of data, sampling techniques, measures of central tendency and dispersion, elementary probability, discrete and continuous probability distributions, sampling distributions, hypothesis testing, confidence intervals, and simple linear regression.

Prerequisites: [MATH 111](#) or [MATH 140](#) or [MATH 143](#) or [MATH 241](#).

Social Science

ECON 210 Microeconomics 3 Credits (3,0)

This course is an introduction to the economic principles of free enterprise supply and demand, private and social implications of revenue maximization, cost minimization, profit maximization, market structure, and resource markets. Current microeconomic issues in aviation (such as elasticity, pricing, taxes, subsidies, market implications, liability reform, evolution of airline completion, etc.) are discussed.

Prerequisites: [MATH 111](#) or [MATH 140](#) or [MATH 143](#) or [MATH 241](#) and [ENGL 123](#) or [ENGL 143](#).

ECON 211 Macroeconomics 3 Credits (3,0)

This course is an introductory analysis of employment, inflation, recession, GDP economic growth, national income/output and international trade with an emphasis on practical policy alternatives. Macroeconomic aviation applications such as the counter-cyclical growth of start-up airlines and consideration of ATC privatization are incorporated.

Prerequisites: [MATH 111](#) or [MATH 140](#) or [MATH 143](#) or [MATH 241](#) and [ENGL 123](#) or [ENGL 143](#).

PSYC 220 Introduction to Psychology 3 Credits (3,0)

This course will introduce the student to the field of psychology, and is a survey of the bio-psychosocial continuum and the intra-psychic, interpersonal, and organizational factors affecting human behavior. A primary feature of the course is its focus on the scientific method as the route to psychological knowledge. Students examine the rationalist, empiricist and experimental foundations of the scientific method and how these foundations can be critiqued. Topics include sensation, perception, learning, motivation, emotion, memory, personality, psychopathology, physiological psychology and social processes. Emphasis is placed on the application of the basic principles of psychology to engineering, aviation, public policy and business.

SOCI 210 Introduction to Sociology 3 Credits (3,0)

Students are provided an integrated survey of the fundamental concepts of culture, forms of collective behavior, community and social organization, social interaction, and social change. The social effects of aviation and the impact of science on the social order living in an air age will also be investigated.

HIST 130 History of Aviation in America 3 Credits (3,0)

A survey of the history of America in the 20th century, the course emphasizes the explosive growth of aviation as a major influence upon the economic, military, and societal development of the United States.

Humanities

HUMN 142 Studies in Literature 3 Credits (3,0)

This course emphasizes writing, reading and appreciation skills. Reading materials include selected novels, poems and plays.

Prerequisites: [ENGL 123](#).

HUMN 210 World Culture 3 Credits (3,0)

This course focuses on the cultural development of world societies including but not limited to religious, social, political, and philosophical arenas as all apply to contemporary circumstances. Skills emphasized are: comprehensive comparative reading, analysis and critiques, and writing.

Prerequisites: [ENGL 123](#).

HUMN 213 Introduction to Islamic Studies 3 Credits (3,0)

This interdisciplinary course will provide students with a broad overview of Islamic history and contemporary culture. It will explore the social and cultural conditions of pre-Islamic Arabia, the foundational teachings of Islam, the history and aesthetic form of the Quran, the biography and sayings of Muhammad and the relationship between Muhammad's biography and contemporary Islamic practices, including the daily rituals, modes of dress and gender norms variously observed in societies where Islam is predominant. The course will culminate with an exploration of specific cultural and social issues facing contemporary Muslims, including the role of women in public space, the separation between religion and politics, and religious violence. Skills emphasized will be: comprehensive comparative reading, analysis, and writing.

Prerequisites: [ENGL 123](#).

HUMN 220 Asian Studies 3 Credits (3,0)

This course will provide an overview of the historical and contemporary cultures found across Asia, for any student interested in the diversity of human experiences found across the largest continent in the world. Drawing on a variety of humanistic and social science disciplines, this course explores the influence of history, politics, and religion, among other topics, on contemporary Asian cultures.

Prerequisites: [ENGL 123](#).