HSDE Common Course Descriptions

Math/Statistics

MAC 1105. College Algebra (3). Prerequisite: MAT 1033 with a grade of "C–" or better or a suitable mathematics examination placement score. Recommended background: two years of high school algebra. This course is a review of algebraic operations, equations, and inequalities; functions and functional notation; graphs; inverse functions; linear, quadratic, rational function; absolute value; radicals; exponential and logarithmic functions; system of equations and inequalities; applications. On basis of test scores the student may be required to take a community college course before MAC 1105.

MAC 1114. Analytic Trigonometry (3). Prerequisite: MAC 1105 (C- or better) or MAC 1140 (C- or better) or MAC 2233 (C- or better). This course covers trigonometric functions, inverse trigonometric functions and their graphs; identities and conditional equations; solution of triangles; trigonometric form of complex numbers; DeMoivre's theorem and nth roots; introduction to plane vectors.

MAC 1140. Precalculus Algebra (3). Prerequisites: MAC 1105 (C- or better) or MAC 1114 (C- or better) or MAC 2233 (C- or better). This course covers functions and graphs, especially higher degree polynomial, rational, exponential, and logarithmic functions; systems of equations; solution of linear systems, matrix methods; determinants; sequences and series, induction; and the binomial theorem. The course also explores applications, approximation, and methods of proof. May be taken concurrently with MAC 1114.

MAC 2233. Applied Calculus (3). Prerequisites: MAC 1105 (C– or better) or MAC 1114 (C– or better) or MAC 1140 (C– or better) or MAC 1147 (C– or better); (Not open to students who have credit in MAC 2311 with a grade of "C–" or better). This course covers limits, continuity, first and higher derivatives, and the differential, with applications to graphing, rates of change, and optimization methods; techniques of integration and applications; introduction to multivariate calculus.

MAC 2311. Calculus with Analytic Geometry I (4). Prerequisites: MAC 1147; or MAC 1140 and MAC 1114; or suitable mathematics examination placement score. This course covers polynomial, trigonometric, exponential, and logarithmic functions; first and second derivatives and their interpretations; definition and interpretation of the integral; differentiation rules; implicit differentiation; applications of the derivative; anti-derivatives; fundamental theorem of calculus. This course must be taken for reduced credit by students with prior credit for some of the content.

MAC 2312. Calculus with Analytic Geometry II (4). Prerequisite: MAC 2311 or suitable mathematics examination placement score. This course covers techniques of integration; applications of integration; series and Taylor series; differential equations. This course must be taken for reduced credit by students with prior credit for some of the content.

MAC 2313. Calculus with Analytic Geometry III (5). Prerequisite: MAC 2312. This course covers functions of several variables and their graphical representations; vectors; partial derivatives and gradients; optimization; multiple integration; polar, spherical, and cylindrical coordinate systems; curves; vector fields; line integrals; flux integrals; divergence theorem and Stokes' theorem. This course must be taken for reduced credit by students with prior credit for some of the content.

STA 1013. Statistics Through Example (3). This course provides students with a background in applied statistical reasoning. Fundamental topics are covered including graphical and numerical description of data, understanding randomness, central tendency, correlation versus causation, line of best fit, estimation of proportions, and statistical testing. Statistical thinking, relevant ideas, themes, and concepts are emphasized over mathematical calculation. In this class students learn many of the

elementary principles that underlie collecting data, organizing it, summarizing it, and drawing conclusions from it.

STA 2023. Fundamental Business Statistics (3)**.** Miscellaneous requirement: Two years of high school algebra is recommended. Special Note: High school students who earn a "3" or better on the AP Statistics Exam may elect to be given credit for STA 2023. This course covers statistical applications in business, involving graphical and numerical descriptions of data, data collection, correlation and simple linear regression, elementary probability, random variables, binomial and normal distributions, sampling distributions, and confidence intervals and hypothesis tests for a single sample. This course prepares students for further study and job preparation in the field of Business. The course emphasizes understanding of data and interpretation of statistical analyses, and requires students to think of data, and report the results of their analyses, in context.

STA 2122. Introduction to Applied Statistics (3). Prerequisite: MAC 1105. Special note: No credit given for STA 2122 if a grade of "C-" or better is earned in STA 2171, STA 3032, or QMB 3200. This course covers normal distributions, sampling variation, confidence intervals, hypothesis testing, one-way and two-way analysis of variance, correlation, simple and multiple regression, contingency tables and chi-square test, and non-parametric statistics.

History/Social Science

AMH 2010. A History of the United States to 1877 (3). This course introduces students to the history of British North America and the United States through the era of the Civil War and Reconstruction.

AMH 2020. A History of the United States Since 1877 (3). This course surveys the United States from the end of the Civil War to the present with emphasis on social, economic, and political problems of the 20th century. May not be taken by students with test credit in American history

AMH 2095. American Indians in the United States (3). This course surveys American-Indian relations with the people and the government of the United States, beginning in the 1760s and continuing to the present. Course material examines the Indians' diplomatic and military struggles, as well as the Indian perspective on familiar historical events such as the Civil War, the New Deal, and the 1960s.

AMH 2097. The History of Immigration to the United States (3)**.** This course explores the history of immigration to the United States. Topics include the evolution of ethnic cultures and the role of race in adjustment, and related conflicts from colonial times to the present. The course does not count as credit toward the history major.

ANT 2000. Introduction to Anthropology (3). This introductory course offers a holistic approach to understanding what it means to be human, studying humans and human behavior from the perspectives of evolution and genetics, the archaeological record, and language and culture.

ANT 2416. Childhood Around the World (3). This course examines the variety of ways childhood is experienced in other cultures, allowing students without a background in anthropology to develop an appreciation for the nature of childhood and the pivotal role this stage plays in maintaining cultural continuity and influencing cultural evolution.

CPO 2002. Introduction to Comparative Government and Politics (3). This course addresses government institutions and current political parties throughout the world, as well as theories that explain similarities and differences among countries. Topics may include electoral systems, parliamentary systems, causes of political change, democratization, political culture, ideologies, and economic and social policy. Examples are drawn from Western democracies and developing countries.

ECO 2013. Principles of Macroeconomics (3). This course explores aggregate economics and national income determination, money and monetary theory, present macroeconomic conditions, and aggregative policy alternatives; theory of international trade and the balance of payments; economic growth and development.

ECO 2023. Principles of Microeconomics (3). This course covers consumption, production, and resource allocations considered from a private and social point of view; microeconomic problems and policy alternatives; economics of inequality and poverty; and comparative economic systems.

FAD 2230. Family Relationships: A Life Span Development Approach (3). This course examines the dynamics of contemporary family life and interpersonal relationships in a changing society and over the life course.

POS 1041. American Government: National (3). This course investigates how the national government is structured and how the American political system operates. Covers the philosophical and constitutional foundations of American government, the branches of the national government, the mechanisms by which citizens are connected to their government, and the policy outputs of government.

PSY 2012. General Psychology (3). This course is a broad overview covering important psychological principles and findings within major subfields of psychology, and the basic scientific methods employed. A "bio-psycho-social" approach is emphasized throughout so that all behaviors (including how we think, feel, and act) are discussed in terms of biological, psychological, and social determinants and consequences.

SYG 1000. Introductory Sociology (3). This course is an introduction to the fundamentals of sociology. In the course, emphasis is placed on exposure to the basic findings of empirical research studies in a wide range of areas traditionally examined by sociologists.

SYO 2101. Families in the United States (3). In this course, students will explore the family as a fundamental social unit in American society. Students will examine the macro historical processes that have shaped families over time within the context of American culture. As they do so, students will develop an understanding of basic social and behavioral concepts and well-established scientific methods used by social scientists to investigate social phenomena.

Humanities

ARH 2000. Art, Architecture, and Artistic Vision (3). This course focuses on a thematic approach to the understanding and appreciation of works of art.

ARH 2090. Great Discoveries in World Archaeology (3). This course investigates the meaning and role of archaeology in shaping our past and present lives. We ask questions about the purpose, the means, and the agencies behind the excavation process, and thus touch upon the theoretical underpinnings of archaeology as a science. The course is a comprehensive survey that begins with the basics of human evolution and covers the history and material culture of key ancient civilizations, including those that populated the Mesopotamian and Mediterranean basins.

CLT 2374. Classical Mythology (3). This course is a survey of Greco-Roman myth and legend, readings from illustrative ancient authors in English translation, approaches to the study of ancient myth.

CLT 2375. Ancient Mythology, East and West (3). This course provides students with an introduction to the mythological traditions from a diverse group of ancient cultures, including those of Greece and Rome, the Near East, Northern Europe, India, China, Africa, and the Americas.

HUM 2020. The Art of Being Human: Examining the Human Condition Through Literature, Art, and Film (3). In this course, students gain an overview of the development of Western culture from Antiquity to the present as it is expressed through the arts (painting, sculpture, architecture, literature, music, film and the performing arts), and especially through literature. The course examines the human condition through culture and the arts to better understand how the humanities are interconnected.

MUH 2019. Modern Popular Music (3). This course surveys the development of popular music in America from the early 20th century to the present with a focus on the cultural, social, economic, technological, and political conditions surrounding that music. The course widens student's comprehension of the times, places, cultural contexts, intellectual debates, and economic conditions that foster (or hinder) artistic innovation.

MUH 2051. Music in World Cultures (3). This course provides an introductory survey of various musical traditions in a global perspective, exploring music both as a phenomenon of sound and as a phenomenon of culture. Students analyze tradition as a constantly evolving and transformative entity that nurtures and sustains core cultural values. The social context of music, including social structure, geography, globalization, mass mediation, conceptions of religion, instruments, aesthetic priorities, and cultural beliefs that inform music within given cultural contexts is emphasized.

MUL 2010. Music Literature, Listening and Understanding (3). This course is an introduction to music as a manifestation of human culture, as an expressive art form, and as an intellectual discipline. The course also develops a knowledge of a variety of significant musical repertoire, skills for perceptive listening, and the ability to respond to musical expression with critical insight.

PHI 2010. Introduction to Philosophy (3). This course introduces some of the central problems in philosophy. Students also learn how to construct and criticize arguments and develop their own philosophical positions.

PHI 2630. Ethical Issues and Life Choices (3). This course draws on ethical theories to explore the major ethical issues that one faces as one makes decisions about the kinds of activities to engage in and the kind of life to lead. Issues such as those involving life and death (e.g., abortion, euthanasia, animal rights) and social justice (e.g. discrimination, responsibility to future generations) are examined.

REL 1300. Introduction to World Religions (3). This course surveys the major living religious traditions of the world, with attention to their origins in the ancient world and their classic beliefs and practices.

Natural Science

ANT 2100. Introduction to Archaeology (3). This course is an introduction to modern anthropological archaeology. The course introduces students to the interdisciplinary scientific approaches employed in contemporary archaeological research and provides them with an overview of the origins and evolution of human social and economic systems.

ANT 2100L. Introduction to Archaeology Laboratory (1). Corequisite: ANT 2100. This course is conducted as a hands-on laboratory in archaeological methodology. Each week, students have a series of laboratory exercises designed to teach specific analytical techniques, including: paleozoological analysis, paleobotanical analysis, geophysical prospecting techniques, and GIS.

AST 1002. Planets, Stars, and Galaxies (3). This course provides general acquaintance with some of the facts, concepts and scientific methods of astronomy. As a liberal study course, the goal is to help students learn some basic facts of astronomy as well as gain an appreciation of astronomy as a science, the universe, and the current scientific ideas about its history and its future.

AST 1002L. Planets, Stars, and Galaxies Laboratory (1). Corequisite: AST 1002. This course, which consists of outdoor and indoor labs, provides a hands-on introduction to astronomy as an observational science. In the outdoor labs students learn how to make observations and measurements of planetary, stellar and galactic objects using either your unaided eyes, binoculars or a telescope. The indoor labs acquaint them with the telescope, the coordinate system used to locate astronomical objects on the sky, the motion of objects in the sky and other basic concepts of astronomy.

BSC 2010. Biological Science I (3). This is the first part of a two-semester introductory biology course designed for those interested in pursuing a career in life sciences. The course provides the building blocks necessary for a student to gain a strong foundation in general biology. Topics covered provide an overview of biological processes and function at the molecular, cellular and organismal level.

BSC 2010L. Biological Science I Laboratory (1). This course introduces basic chemistry, energetics, metabolism, and cellular organization; molecular genetics and information flow; animal and plant function.

BSC 2011. Biological Science II (3). Prerequisite: BSC 2010. This is the second of a two-semester introductory biology course designed for those interested in pursuing a career in life sciences. The course provides an overview of the processes underlying the animal embryonic development, inheritance genetics, evolution and ecology.

BSC 2011L. Biological Science II Laboratory (1). Prerequisites: BSC 2010 and BSC 2010L. Corequisite: BSC 2011. This course focuses on reproduction and development, transmission (Mendelian) genetics, population biology, ecology, and evolution.

CHM 1045. General Chemistry I (3). Prerequisite: MAC 1105 with a grade of "C–" or better or placement beyond MAC 1105. This course includes topics such as chemical symbols, formulas, and equations; states of matter; reactivity in aqueous solution; electronic structure, bonding, and molecular geometry. Students taking CHM 1045 after taking CHM 1020 and/or CHM 1032 may register for reduced credit, as indicated in the department's policy on reduced credit.

CHM 1045L. General Chemistry I Laboratory (1). Prerequisite: MAC 1105 with a grade of "C–" or higher or placement beyond MAC 1105. Corequisite: CHM 1045. This laboratory offers an introduction to quantitative techniques and to the chemical laboratory. Topics include stoichiometry, atomic spectra, thermodynamics, gases, as well as acids and bases, chemical structures, and reactivity.

CHM 1046. General Chemistry II (3). Prerequisites: CHM 1045 or CHM 1050, each with a grade "C–" or

better or placement beyond MAC 1105. Corequisite: CHM 1050L. This course includes topics such as intermolecular forces, chemical kinetics, equilibrium, acids and bases, elementary thermodynamics, and electrochemistry.

CHM 1046L. General Chemistry II Laboratory (1). Prerequisites: CHM 1045 and CHM 1045L or CHM 1050 and CHM 1050L. Corequisite: CHM 1046. This laboratory offers an introduction to quantitative techniques and to the chemical laboratory. Topics include intermolecular forces, solutions, kinetics, equilibria, acids and bases, buffers, solubility, thermodynamics and electrochemistry.

ESC 1000. Introduction to Earth Science (3). This course is an introduction to the study of planet Earth, its internal dynamics, and surficial weathering, erosion, sedimentary processes, the composition and motion of its oceans and atmosphere, and its origin as part of the solar system. Course credit may not be received for this course and also GLY 1000, GLY 1030, or GLY.

ESC 1000L. Introduction to Earth Science Laboratory (1). This course is a laboratory introduction to earth science as the study of planet earth, specifically a study of minerals, rocks, maps, oceans, and the atmosphere. Course prerequisite or corequisite: GLY 1030 or ESC 1000.

EVR 1001. Introduction to Environmental Science (3). This course is an introduction to environmental science that covers the basic functioning of the earth's environmental system and human effects on that system.

EVR 1001L. Introduction to Environmental Science Laboratory (1). This course is a virtual-reality lab that covers various aspects of environmental science. Students submit lab reports on-line for each module that include data analysis and graphical interpretation.

HUN 1201. The Science of Nutrition (3). This course focuses on the elements of nutrition and factors influencing the ability of individuals to maintain good nutrition status.

MET 1010. Introduction to the Atmosphere (3). This course covers the structure of the atmosphere; weather processes and weather systems, including climatic processes. Credit may not be received in this course if student has already received credit in 2000-level or higher MET courses.

MET 1010L. Introduction to the Atmosphere Laboratory (1). Prerequisites: MAC 1105 or equivalent and college-level algebra. Corequisite: MET 1010. This course covers data analysis, instruments, and weather system models.

PHY 2048C. General Physics A (5). Prerequisite: MAC2311. This course is designed to provide students with an understanding of how and why things move. Topics covered include kinematics, forces, energy, momentum, oscillations, and thermodynamics. The course is intended for physical science majors and engineers and to be taken as a sequence with General Physics B (PHY 2049C) and Intermediate Modern Physics (PHY 3101). Completing Modern Physics entitles students to a minor in physics. Calculus is used in this course.

PHY 2049C. Calculus-Based Physics II (5). Prerequisites: MAC2312 and PHY2048C. Corequisite: PHY2049L. This course is a calculus-based introduction to electricity, magnetism, and optics for physical science majors. Course consists of lectures, recitations, and laboratory.

PHY 2053C. College Physics A (4). Prerequisites: MAC 1114 and MAC 1140 with grades of "C–" or better or suitable mathematics examination placement score. Corequisite: PHY 2053L. This course is the first semester of a two-semester sequence for life-sciences students and is intended to provide a general knowledge of the basic concepts of physics relating to mechanics, energy, gravity, rotational motion, fluids, heat, thermodynamics, vibrations and waves. Physics is based on problem solving and this class involves both solving word problems and performing laboratory exercises. The level of mathematical skill necessary to complete this course is a strong proficiency with algebra (especially word problems) and trigonometric functions; calculus is not used.

PSB 2000. Introduction to Neuroscience (3). This course helps students understand basic nervous system mechanisms that underlie behavior and how systematic observation and experimentation are involved in constructing our understanding of these mechanisms. The course also conveys an appreciation for utilizing critical thinking and scientific knowledge when making important decisions. (Cannot be taken after PSB 3004C.)