## AS = ACTUARIAL SCIENCE

AS 4140 PROBABILITY STATS 3.0

Mathematical Foundations of Actuarial Science. Prerequisite: RMI 3750; MATH 4751. CSP: 2. Requires a 2.5 GSU GPA and 45 semester hours. This course covers 1) univariate probability distributions, including binomial, negative binomial, geometric, hypergeometric, Poisson, uniform, exponential, chisquare, beta, Pareto, lognormal, gamma, Weibull, and normal; 2) multivariate joint distributions, conditional and marginal distributions; 3) moments and moment generating function, 4) transform of variables, 5) order statistics, and 6) central limit theorem. The purpose of this course of reading is to develop knowledge of the fundamental probability tools for quantitatively assessing risk. The application of these tools to problems encountered in actuarial science is emphasized. A thorough command of probability topics and the supporting calculus is assumed.

AS 4230 THEORY OF INTEREST 3.0

Theory of Interest. Prerequisite: Math 2215. CSP: 2. Requires a 2.5 GSU GPA and 45 semester hours. Topics include measurement of interest, accumulation and discount, forces of interest and discount, equations of value, annuities, perpetuities, amortization and sinking funds, yield rates, bonds and securities, depreciation, depletion, and capitalized costs.

AS 4260 MICROECO FOUNDATIONS AS 3.0

Microeconomic Foundations of Actuarial Science. Prerequisite: Econ 2106 and concurrent registration in AS 4230. CSP: 1. Requires a 2.5 GSU GPA and 45 semester hours. This course covers the applications of interest theory and calculus to intermediate microeconomics in an actuarial context.

AS 4320 INTRO STOCHASTIC MODELS 3.0

Introduction to Stochastic Actuarial Models. Prerequisite: AS 4130. CSP: 2. Requires a 2.5 GSU GPA and 45 semester hours. This course covers the application of basic stochastic models in an actuarial setting. Topics include review of frequencyseverity models, introduction to compound distri butions, stochastic models, and simulation techniques.

AS 4340 LIFE CONTINGENCIES I 3.0

Life Contingencies I. Prerequisite: AS 4130, 4230. Requires a 2.5 GSU GPA and 45 semester hours. CSP: 2. This course is an introduction to life contingencies as applied in actuarial practice. Topics include present value random variables for contingent annuities and insurance, their distributions and actuarial present values, equivalence principle, and other principles for determining premiums.

AS 4350 LIFE CONTINGENCIES II 3.0

Life Contingencies II. Prerequisite: AS 4340. Requires a 2.5 GSU GPA and 45 semester hours. CSP: 2. This course is a continuation of the study of life contingencies. Topics include insurance and annuity reserves, characterization of discrete and continuous multiple decrement models in insurance and employee benefits, and multiple life models.

AS 4389 DIR READ IN ACT SCI 1.0 to 3.0

Directed Readings in Actuarial Science. Prerequisite: consent of instructor.

## ASTR = ASTRONOMY

ASTR 1000 INTRODUCTION TO THE UNIVERSE 3.0

Introduction to the Universe. Three lecture hours a week. A survey of the universe, examining the historical origins of astronomy; the motions and physical properties of the Sun, Moon, and planets; the formation, evolution, and death of stars; and the structure of galaxies and the expansion of the universe.

ASTR 1010 ASTRONOMY OF THE SOLAR SYSTEM 4.0

Astronomy of the Solar System. Three lecture and two laboratory hours a week. Astronomy from early ideas of the cosmos to modern observational techniques. The solar system planets, satellites, and minor bodies. The origin and evolution of the solar system.

ASTR 1020 STELLAR & GALACTIC ASTRONOMY 4.0

Stellar and Galactic Astronomy. Prerequisite: Astr 1010 with grade of D or higher. Three lecture and two laboratory hours a week. The study of the Sun and stars, their physical properties and evolution, interstellar matter, star clusters, our galaxy and other galaxies, and the origin and evolution of the universe.

ASTR 3010 TOPICS IN MODERN ASTRONOMY 3.0

Topics in Modern Astronomy. Prerequisite: Astr 1020 with grade of D or higher, or equivalent. Three lecture hours a week. Pulsars, quasars, black holes, xray sources, UV astronomy, IR astronomy, radio galaxies, interstellar molecules, 3K background radiation, manned and unmanned planetary exploration.

ASTR 3500 FUNDMNT OF ASTR & ASTROPHYSICS 4.0

Fundamentals of Astronomy and Astrophysics. Prerequisite: Phys 2212K with grade of D or higher, or consent of instructor. Four lecture hours a week. An intermediatelevel course which uses the tools of calculusbased physics to explore astronomy and astrophysics. Applications of mechanics, quantum physics, basic relativity, and thermodynamics to the study of planets, stars, galaxies, and cosmology.

ASTR 4000 FUNDAMENTALS OF ASTROPHYSICS 3.0

Fundamentals of Astrophysics. Prerequisites: Phys 3401 and 3402 with grades of D or higher. Three lecture hours a week. Application of mechanics, electricity and magnetism, and atomic and nuclear physics to the solution of astrophysical problems.

ASTR 4010 ASTRONOMICAL METHODS LAB 1.0

Astronomical Methods Laboratory. Prerequisite: consent of department. Three laboratory hours a week.

ASTR 4100 ASTRO TECHNIQS/INSTRUMENTATION 3.0

Astronomical Techniques and Instrumentation. Prerequisite: Astr 3500 with grade of D or higher, or consent of instructor. Three lecture hours a week. Fundamental and practical application of photography, spectroscopy, photometry, astrometry, interferometry, and current developments in detector technology and telescope design.

## BCOM = BUSINESS COMMUNICATION

BCOM 3950 FUND OF BUSINESS COMMUNICATION 3.0

Fundamentals of Business Communication. Prerequisites: Eng 1101, Engl 1102. Requires a 2.5 GSU GPA. CSP: 1,6,7. Fundamentals of business communication prepares students to write and speak effectively in a variety of business situations. Students will examine the influence of audience, purpose, and situation and learn how to use those elements to formulate and apply communication strategies that enable them to inform, persuade, and motivate others. Topics in clude business letters, memos, and reports; oral presentations; nonverbal communication; personal styles and interpersonal communication; the influence of culture, ethics, and technology on communication; and the small group process. This class is required to fulfill the Junior Communication Course Requirement and students must earn a minimum grade of “C.” Students may not register for this class until they have earned at least 45 semester hours of college level credit.

## BIOL = BIOLOGY

BIOL 1103K INTRODUCTORY BIOLOGY I 4.0

Introductory Biology I. Three lecture hours and three laboratory hours a week. Introduction to fundamental concepts in biology, with an emphasis