the artists’ connections to social, political, and cultural developments.

446 History of Contemporary Art (3) Major movements in art from World War II through the 1980s; the wave of modernism and the rise of postmodernism; focus on America and Europe but Latin American and non-Western art also considered.

447 Latin American Art (3) Pre-Hispanic, colonial, and contemporary art, including still-life, sculpture, and related arts throughout Latin America.

448 Issues in Contemporary Art (3) Principal issues concerning contemporary artists and the sources and theories behind the issues.

449 Art of the American South: 1560-1861 (3) History of architecture and the visual arts made in the states below the Mason-Dixon Line.

4470 History of Photography (3) History of photography from its inception in the 1830s until the present; technological development of the medium and its inherent aesthetics; interrelationships between photography and more traditional media.

480 Video Art and Theory (3) Sources and origins of artists’ video from the late 1960s to the present; consideration of theoretical, political, and technological aspects; survey of single-channel, projected, installation, and Internet formats for video art display.

482 Digital Art History (3) Survey of art and technology focusing on recent computer art and digital, interactive, and network-based art forms from the 1990s to the present.

484 New Media Art Theory (3) A reading intensive course that introduces students to issues and theories of new media art.

490 Independent Study in Art History (1-3) Prereq.: consent of instructor. May be taken for a max. of 6 hrs. of credit when topics vary.

499 Undergraduate Seminar (3) Prereq.: ARTH 1440. 1441, and any four additional art history courses; only open to art history majors of junior and senior standing. Intensive reading, writing, and classroom discussion; introduction to art-historical research and methodologies.

7400 Art Theory and Criticism (3) Critics; building of art collecting; art across modern times.

7410 Colloquium in Art Historical Methods (1) An introduction to the historical development of the discipline of art history and its methodological parameters.

7420 Special Topics in Art History (3) Prereq.: graduate standing in art or consent of instructor. May be taken for a max. of 6 hrs. of credit when topics vary. Advanced topics in art history.

7441, 7442 Graduate Research Seminar in History of Art (3,3) Each course may be taken for a max. of 6 hrs. of credit when topics vary; no more than 4 hrs. per semester.

7490 Independent Study in Art History (1-3) Prereq.: consent of instructor. May be taken for a max. of 6 hrs. of credit when topics vary.

ASTRONOMY • ASTR

General education courses are marked with stars (*).

★ 1101 The Solar System (3) Prereq.: MATH 1021 or an ACT math score of at least 21. Fundamental principles of the solar system.

★ 1102 Stellar Astronomy (3) Prereq.: MATH 1021 or an ACT math score of at least 21. Fundamental principles of stellar astronomy.

1108 Astronomy Laboratory (1) 2 hrs. lab. Prereq.: credit or registration in ASTR 1101. Analysis of light position of celestial bodies with application to star charts and globes; visual and photographic observations will be made using telescopes; provides student with practical observing experience.

1109 Astronomy Laboratory (1) 2 hrs. lab. Prereq.: credit or registration in ASTR 1101. Study of planets and their moons; provides student with practical observing experience.

2001 Current Topics in Astronomy and Astrophysics (3) S Prereq.: ASTR 1101. 1 hr. lecture; 1 lab. Primarily for non-science students. Topics of current interest in astronomy; recent topics include extraterrestrial intelligence, black holes, exploration of the solar system.

4221, 4222 Introduction Astrostatistics (3,3) V Prereq.: PHYS 1202 or 2102 or consent of instructor. ASTR 4221 is prerequisite for 4222. Sun, stars, and stellar systems; results and problems of modern astrophysical research.

2641 Modern Observational Techniques (3) V Prereq.: ASTR 1101 or 1108. 1 hr. lecture; 6 hrs. lab. Modern astronomical observations and reductions; the telescope, astronomical photography, spectroscopic and photometric observations and reductions.

4750 Special Topics in Observational Astronomy (3) May be taken twice for credit when topics vary. One topic scheduled each time course is offered; current topics include astronomical spectroscopy and astronomical photometry.

6101 Astronomy for Teachers (4) Su,V. For teachers and students in the College of Education. Cannot be taken for credit by physics majors. General astronomy including the solar system, stellar astronomy, and stellar systems.

6108 Astronomy Laboratory for Teachers (1) S Prereq: for all course work in the College of Education. May be taken for a max. of 4 hrs. of credit by physics majors. May be taken for a max. of 4 hrs. of credit by non-physics majors. 1 hr. lecture; 6 hrs. lab. Visual and photographic observation of celestial objects such as the sun, moon, stars, and nebulae using small reflectors as well as large telescopes through multimedia technology.

7741, 7742 Stellar Astrophysics (3,3) F S ASTR 7741 is prerequisite for 7742. Also offered as PHYS 7741, 7742. Application of physical principles to study of stars; spectroscopic, stellar atmospheres, stellar structure, and stellar evolution.

7752, 7753 Galactic Astrophysics (3,3) F S ASTR 7752 is prerequisite for 7753. Also offered as PHYS 7751, 7752. Application of physical principles to study of galaxies; interstellar medium; galaxy structure and stellar motion in galaxies, and cosmology.

7777 Seminar in Astronomy and Astrophysics (1-6) V May be taken for a max. of 6 hrs. of credit. Also offered as PHYS 7777.

7783 Topics in Astronomy and Astrophysics (3) V May be taken for a max. of 6 hrs. of credit. Also offered as PHYS 7783.

BASIC SCIENCES • BASC

2010 Inquiry Approaches to Math and Science Teaching (1) Prereq.: ASTR 1102 and MATH 1552. General principles of inquiry-based math and science instruction; design and execution of lesson plans in elementary school under guidance of course instructor and mentor.

2011 Inquiry-Based Math and Science Lesson Design (1) Prereq.: BASC 2010. Design and teach lesson plans in middle school under guidance of course instructor and mentor.

6001 Topics in Physical Science for Elementary School Teachers (3) Su only May be taken for a max. of 12 hrs. of credit when topics vary.

6002 Topics in Biological Science for Elementary School Teachers (3) Prereq.: 5 sem. hrs. of introductory biology. May be taken for a max. of 12 hrs. of credit when topics vary.

6003 Topics in Environmental Science for Elementary School Teachers (3) Su only May be taken for a max. of 9 hrs. of credit when topics vary.

7000 Methods of Instruction in College Life Science Laboratories (1) Prereq.: Pass grading. Philosophy and practice of life science laboratory education at the college level.

BIological engineering • BE

1250 Introduction to Engineering Methods (2) F 6 hrs. lab. Fundamentals of engineering design, presentation of an engineering design; graphical expression of engineering design using computer-aided drafting.

1252 Biological Engineering in (2) S Prereq.: credit or registration in BIOE 1201. 1 hr. lecture; 3 hrs. lab. Effect of variability and constraints of biological systems on engineering problem solving and design; engineering units; engineering materials and methods; computer-aided presentation; laboratory demonstration of biological engineering analysis.

2037 Elements of Landscape Construction (3) F S Prereq.: MATH 1021 or 2063. 1 hr. lecture; 3 hrs. lab. Theory and use of tape, level, transit, plane table, and compass; principles of area and volume calculations, land slope, drainage grades, legal land description, and cadastral mapping.

2350 Experimental Methods for Engineers (3) S Prereq.: BE 2352. 2 hrs. lecture; 3 hrs. lab. Introduction to experimental design, statistical analysis, and the Computer methods and experimental equipment for error control; instrumentation for engineering applications; measurement of temperature, pressure, flow, strain, and vibration in biological products; microcomputer data loggers and computer data acquisition systems.

2352 Quantitative Biology in Engineering (3) F Prereq.: BE 2350 or permission of instructor. Prereq.: Credit or registration in CE 3400. 2 hrs. lecture; 3 hrs. lab. Most important concepts and methods utilized in the study of biological phenomena in engineering design; relationships among parameters using linear and nonlinear statistical expressions; case studies of engineering design solutions.

3249 Engineering Practice I (3) Su only Prereq.: consent of instructor. Pass-fail grading. Six weeks of full-time employment in an industry participating in the summer program. Selected engineering problems in an industrial environment.

3250 Engineering Practice II (3) Su only Prereq.: consent of instructor. Pass-fail grading. A minimum of six weeks of full-time employment in an industry participating in the summer program. Selected engineering problems in an industrial environment.

3290 Professional Engineering for Biologists (2) Prereq.: Grad. of "C" or better in CE 2450. Ethical standards, technical communication, goal setting, project management and professional practices. Cannot be used to fulfill College of Engineering and Computer Science degree requirements. Can be used by College of Education students.

3381 Irrigation Fundamentals and Management (3) Prereq.: consent of instructor. For majors in agriculture, design, and natural sciences. Cannot be used to fulfill College of Engineering and Computer Science degree requirements. Other irrigation systems, and design and operation of irrigation systems and other water source to water source design and operation. May be taken for a max. of 6 hrs. of credit by non-agriculture majors and non-agriculture students.

3398 Special Projects in Biological Engineering (1-4) S Prereq.: credit or registration in CE 3400. 2 hrs. lecture; 3 hrs. lab. Water quality criteria and regulations for the agricultural community; production, treatment, and disposal of agricultural and food processing wastes; management of agricultural, municipal, and industrial waste and pollution; bi-product utilization; land application; wetland restoration; stream sampling and analysis; re-aeration modeling.

3989 Applications of Microbiology (1-4) S Prereq.: credit or registration in CE 3400. 2 hrs. lecture; 3 hrs. lab. Applications of microbiology and related areas to the food industry and related areas.

3998 Applications of Microbiology (1-4) S Prereq.: credit or registration in CE 3400. 2 hrs. lecture; 3 hrs. lab. Applications of microbiology and related areas to the food industry and related areas.

Biological Engineering