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

446 Introduction to Art History (3) Major movements in art from World War II through the 1980s; the wane of modernism and the rise of postmodernism; focus on American and European art and Latin American and Non-Western art as well.

447 Latin American Art (3) Pre-Hispanic, colonial, and contemporary art; focus on pre-Columbian art, sculpture, and related arts throughout Latin America.

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

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

470 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 day; 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 the relationship of computer art and digital, interactive, and network-based art forms from the 1950s to the present day.

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 Art Critique and Trouble-Seminar (3) Prereq.: ARTH 1440, 1441, and any four additional art history courses; 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) Critic; building of art collections; an introduction to modern times.

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

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 3 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 from terrestrial and celestial sources; visual and photographic observations of stars and nebulae; training in the use of smaller telescopes and larger telescopes with multimedia technologies.

2001 Current Topics in Astronomy and Astrophysics (3) SPrcl. Prereq.: ASTR 1102. Primarily for non-sciences students. Topics of current interest in astronomy; recent topics include extraterrestrial intelligence, black holes, exploration of the solar system.

2211, 4222 Introductory Astrophysics (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.

2261 Modern Observational Techniques (3) V Prereq.: ASTR 1102, 1108. Primarily for 4th year astro physics majors. Modern astronomical observations and reductions; the telescope, astronomical photography, spectroscopic and photoelectric observations and reductions.

4790 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 photography. 4900B Special Topics in Astronomy: consent of instructor. May be taken for a max. of 3 hrs. of credit. Individual reading and theoretical and/or experimental work on an advanced enc. 6101 Astronomy for Teachers (4) S, SuV For teachers and students in the College of Education. Cannot be taken for credit by physics majors. General astronomy including the solar system, stellar system, and stellar systems. 6108 Astronomy Laboratory for Teachers (1-3) S, SuV For students in the College of Education. May not be taken for credit by physics majors. May be taken for a max. of 9 hrs. of credit. 2-6 hrs. lab. Visual observation techniques including the use of star charts and globe; 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 astrophysical principles to study of stars; spectros- copy, 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 motions 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 (1-3) Problems in Astronomy (1-3) Prereq.: MATH 1030, 1161; physics for teachers major; course in 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) S, SuV 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.: S, SuV. 5 sem. hrs. introductory biology. May be taken for a max. of 9 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 for Elementary School Teachers (1-4) F, S Prereq.: consent of instructor. May be taken for a max. of 6 hrs. of credit. Library research, experimental and/or theoretical investigation, and written report in form of engineering report.

2490 Senior Engineering Design and Professionalism (2) F Prereq.: BE 3290. Students work in teams to develop a detailed design to address a technical problem that the team chose in BE 3290. Activities include developing measurable design objectives and a product design specification, creating multiple design solutions, evaluating design solutions, and completing a final design.

4292 Senior Engineering Design Laboratory (2) S Prereq.: BE 4290. 6 hrs. lab. Engineering principles used to complete the project for the senior design course. May be taken for a max. of 6 hrs. of credit.

4303 Engineering Properties of Biological Materials (3) V Prereq.: MATH 2051 or credit or registration in CE 3400. 2 hrs. lecture; 3 hrs. lab. Engineering properties, including rheology, friction, mechanical damage, texture, and thermal, optical, and electrical properties.

4323 Biomechanics for Engineers (3) V Prereq.: CE 2450. 2 hrs. lecture; 3 hrs. lab. Also offered as IE 4465. Mechanical behavior of the human musculoskeletal system and component tissue when physical work is performed; engineering mechanics applied to the activities; fundamental knowledge of human anatomy and physiology; workplace design.

4332 Molecular Methods in Biological Engineering (3) V Prereq.: BIO 2083, BE 2350, and credit or registration in BE 4303. Fundamental knowledge of the theory and applications of quantitative molecular techniques used in biological engineering research and design.

4340 Food and Bioprocessing Engineering (3) V Prereq.: BE 2352; credit or registration in BE 3340. 2 hrs. lecture; 3 hrs. lab. Design and analysis of systems for processing biological materials, with emphasis on foods. Topics include biotechnology, fluid flow, thermodynamics, and transport phenomena in food and bioprocessing; unit operations, including mixing, evaporation, drying, and aseptic processing.

4341 Biological Reactor Systems Design (3) S Prereq.: BIO 2053, 2071. 2 hrs. lab. Microbial and biochemical principles used in design of biological reactors for biotransformation; metabolic output and cellular production; design of batch and continuous flow reactors utilizing microbial kinetic models; attached