

ADVANCED ART (3)

Advanced study in studio art enables students to self-direct studies in the form, media, and techniques associated with the discipline. Working with a studio art professor, the student outlines and pursues a preferred course of study: aesthetic and/or technical objectives; statement of artists, periods, and other influences; studio, library, and gallery research and writing to be undertaken; working schedule including studio activity, advising meetings, due-dates, and critique sessions; and other related components. Final evaluation includes written and creative work, accommodation of the outline, and concluding critique. Studio fee.

ART 331 ADVANCED PRINTMAKING (3)

Prerequisite: ART 231

ART 332 ADVANCED PRINTMAKING (3)

Prerequisite: ART 331

ART 355 ADVANCED DRAWING (3)

Prerequisite: ART 255, ART 256

ART 356 ADVANCED DRAWING (3)

Prerequisite: ART 355

ART 357 ADVANCED FIGURE DRAWING (3)

Prerequisite: ART 257

ART 361 ADVANCED PAINTING (3)

Prerequisite: ART 261, ART 262

ART 362 ADVANCED PAINTING (3)

Prerequisite: ART 361

ART 365 ADVANCED PHOTOGRAPHY (3)

Prerequisite: ART 265, ART 266

ART 366 ADVANCED PHOTOGRAPHY (3)

Prerequisite: ART 365

ADVANCED STUDY

The courses listed below are offered to advanced students who have completed two semesters of prerequisites in each area and are qualified for advanced study under faculty supervision.

ART 319 ADVANCED PRINTMAKING (3) *Prerequisite: ART 219*

ART 356 ADVANCED DRAWING (3) *Prerequisite: ART 256*

ART 357 ADVANCED FIGURE DRAWING (3) *Prerequisite: ART 257*

ART 362 ADVANCED PAINTING (3) *Prerequisite: ART 262*

ART 366 ADVANCED PHOTOGRAPHY (3) *Prerequisite: ART 266*

ART 419 ADVANCED PRINTMAKING (3) *Prerequisite: ART 319*

ART 456 ADVANCED DRAWING (3) *Prerequisite: ART 255, ART 356*

ART 462 ADVANCED PAINTING (3) *Prerequisite: ART 261, ART 362*

ART 466 ADVANCED PHOTOGRAPHY (3) *Prerequisite: ART 366*

ART 399 INTERNSHIP IN ART (1-6) *Prerequisite: Juniors or seniors with a 2.25 minimum QPA; approval of written proposal by internship coordinator, supervising faculty, and School Dean prior to registration.* Internships are offered in cooperation with a sponsoring individual or agency to provide students with ongoing educational opportunities in art beyond the classroom that are appropriately related to their area of emphasis. (See "Internships.")

ART 402 **STUDIO ART SEMINAR (3)** *Prerequisite: Faculty approval and a faculty advisor/sponsor.* For junior and senior art majors with fifteen hours completed in major. This course is intended for art majors to facilitate their transition from the undergraduate to the graduate level art program or to the world of work in the arts that exists outside academia. The course will review portfolio issues associated with format, development, and applications; presentation considerations involving exhibitions, competitions, and installations; professional issues associated with employment in public and private education, the design fields and business; the related topics of marketing, ethics, resumes, graduate schools, and the like.

ART 405 **ART STUDIO WORKSHOP (1-3)** *Prerequisite: Basic art experience and approval of the instructor.* This course is an on- or off-campus activity in studio art workshops under specialized instruction (drawing, painting, printmaking, sculpture, ceramics, crafts, photography). The student will be responsible for related expenses. Satisfactory/Unsatisfactory credit only.

ART 411 **SUPERVISED PRACTICUM: CAMPUS PUBLICATIONS (1-3)** Enrollment in these courses is limited to students holding art offices on the editorial or related staffs of the Critograph, Argonaut, or Prism. Requirements and hour designations are established between instructor and student on an individual basis. Satisfactory/Unsatisfactory credit only.

ART 480 **SPECIAL PROBLEMS (1-3)** Students with special interests in art who have reason to undertake studies not included in regular courses may take special problems in art with the consent of the supervising instructor. The work is planned and implemented on an individual basis under faculty supervision to include research, special projects, and conferences.

ART 491 **SPECIAL PROBLEMS IN ART HISTORY (3)** *Prerequisite: Consent of the instructor.* This individualized study program is open to students who have completed eighteen hours of art history course work. It permits the student to explore a specific topic in greater depth and detail.

ATHLETIC TRAINING COURSES (A T)

A T 100 **INTRODUCTION TO ATHLETIC TRAINING (3)** This course is designed to introduce students to the profession of athletic training and other health care professions. Course work will focus on the similarities, differences, and relationship of athletic training to other health care professions.

A T 150 **PREVENTION OF ATHLETIC INJURIES (3)** This course introduces students to injury prevention including equipment fitting, conditioning, biomechanics, protective padding fabrication, and pre-participation examination.

A T 200 **FIELD EXPERIENCE I (1)** *Prerequisites: A T 100, A T 225 and consent of instructor.* This course is designed to enable students to become familiar with a variety of health care professionals with whom athletic trainers interact. This experience will help students understand the role of health care professionals in caring for injured athletes and physically active individuals.

A T 225 **SAFETY AND MANAGEMENT OF HEALTH EMERGENCIES (3)** This course surveys safety principles, accident prevention, professional liability, and appropriate techniques for managing emergencies. (Course fee required.)

A T 240 **CLINICAL EDUCATION I (2)** *Corequisites or Prerequisites: A T 100, A T 225 and consent of instructor.* Students will work with the Lynchburg College athletic training staff in a traditional athletic training setting. Students will complete 150 hours of experience through three rotations. The purpose of the rotations is to give students an opportunity to work with both male and female athletes and to become proficient in athletic training skills.

A T 325 **ASSESSMENT TECHNIQUES OF LOWER BODY**

INJURIES (3) *Corequisites or Prerequisites: BIOL 214, BIOL 215.* Students will learn appropriate injury assessment techniques for the lower extremity. The anatomy of the lower extremities will be reviewed, mechanisms of injury analyzed, basic concepts in assessment will be discussed, and skills necessary to accurately evaluate musculoskeletal injuries of the lower extremities will be practiced. Documentation in athletic training will be discussed and practiced.

A T 326 ASSESSMENT TECHNIQUES FOR UPPER BODY

INJURIES (3) *Prerequisites: A T 325 or consent of instructor.* Students will learn appropriate injury assessment techniques for the upper extremity. The anatomy of the upper extremities will be reviewed, mechanisms of injury analyzed, basic concepts in assessment will be discussed, and skills necessary to accurately evaluate musculoskeletal injuries of the upper extremities will be practiced. Documentation in athletic training will be discussed and practiced.

A T 327 ASSESSMENT TECHNIQUES OF GENERAL MEDICAL CONDITIONS (3) *Prerequisites: BIOL 214, BIOL 215.* This course is designed to provide students with the knowledge and skill necessary to recognize and treat a variety of non-orthopedic injuries/illnesses which may affect physically active people. Athletic training students will learn basic recognition of these pathologies to ensure prompt, appropriate referral of such conditions.

A T 340 CLINICAL EDUCATION II (2) *Prerequisites: A T 240.* Students will work with the Lynchburg College athletic training staff in a traditional athletic training setting and complete 150 hours of experience through two rotations. The purpose of the rotations is to give students an opportunity to work with athletic teams considered at high and low risk for developing injuries. Students are also given an opportunity to become proficient in athletic training skills.

A T 342 CLINICAL EDUCATION III (2) *Prerequisites: A T 340.* Students will work with the Lynchburg College athletic training staff in a traditional athletic training setting and complete 150 hours of experience through two rotations. The purpose of the rotations is to give students an opportunity to work with athletes who usually incur upper extremity and lower extremity injuries. This course provides the students with the opportunity to become proficient in athletic training skills.

A T 350 THERAPEUTIC EXERCISE FOR ATHLETIC INJURIES (3) *Prerequisites: BIOL 214, BIOL 215, A T 100.* Therapeutic exercise and how it affects tissue healing and its role in the treatment of athletic injuries will be examined. Basic components, design, and implementation of rehabilitation programs will be discussed and practiced.

A T 351 THERAPEUTIC MODALITIES FOR ATHLETIC INJURIES (3) *Prerequisites: BIOL 214, BIOL 215, A T 100.* This course provides advanced study of the use of therapeutic modalities in the field of athletic training. The indications, contraindications, and effects of physical agents such as ice, heat, electrical stimulation, and ultrasound will be studied. Students will have an opportunity to practice skills necessary to use modalities effectively.

A T 400 FIELD EXPERIENCE II (1) *Prerequisites: A T 200, A T 240.* Students will work off campus in general medical settings. Students will complete 100 hours of experience through rotations. The purpose of this course is to give students an opportunity to experience healthcare in settings other than traditional athletic training settings. This helps to prepare students for the infinite variety of situations they will face as certified athletic trainers. This course also gives them an opportunity to explore a work environment other than the collegiate athletic training setting.

A T 425 ADMINISTRATION OF ATHLETIC TRAINING PROGRAMS (3) *Prerequisites: A T 342 or consent of instructor.* This course is designed to cover a wide range of athletic training administrative topics. At the conclusion of the course students should be familiar with the multitude of issues that face the athletic trainer who administers an athletic training program. The student should have a plan for addressing administrative issues.

A T 440 **CLINICAL EDUCATION IV (2)** *Prerequisites: A T 342.* Students will work in a traditional athletic training setting and complete 250 hours of experience through a single rotation. The purpose of this course is to give students an opportunity to assume the responsibility of serving as “head” student athletic trainer, an experience which will help them prepare for the advanced responsibilities they will assume as a graduate assistant or an employed certified athletic trainer. This course also provides students an opportunity to become proficient in athletic training skills.

A T 450 **CURRENT ISSUES AND RESEARCH IN ATHLETIC TRAINING (3)**
Prerequisites: A T 342 or consent of instructor. This capstone course is designed to familiarize students with current issues in athletic training and to acquaint them with athletic training research. Students will be expected to integrate knowledge obtained from prior courses to discuss and write on many issues and research topics in athletic training.

BIOLOGY COURSES (BIOL)

BIOL 111 **ORGANISMS, ECOLOGY, AND EVOLUTION (3)** *Corequisite: BIOL 111L.* Three hours lecture. The emphasis of this course is on the fundamentals of the relationships among organisms and their environment.

BIOL 111L **ORGANISMS, ECOLOGY, AND EVOLUTION LABORATORY (1)**
Corequisite: BIOL 111. Three-hour laboratory to accompany BIOL 111.

BIOL 112 **CELLS: GENETIC AND MOLECULAR PERSPECTIVES (3)**
Corequisite: BIOL 112L. Three hours lecture. Understanding of organismal structure and function is based on knowledge of the underlying cellular and molecular structure and function. These in turn are controlled by the genetic mechanisms that determine cellular structure and behavior. The relationships among cells, molecules, and their genetic controls are the focus of this course.

BIOL 112L **CELLS: GENETIC AND MOLECULAR PERSPECTIVES (1)**
Corequisite: BIOL 112. Three-hour laboratory to accompany BIOL 112.

BIOL 205 **PLANT BIOLOGY (4)** *Prerequisite: BIOL 111/111L-112/112L or ENV 101/101L-102/102L.* Three hours lecture and three hours laboratory. This is a study of the morphology, anatomy, life histories, function, evolutionary relationships, ecological, and economic aspects of selected plant groups including algae, mosses, ferns and fern allies, gymnosperms, and flowering plants.

BIOL 210 **ANIMAL BIOLOGY (4)** *Prerequisite: BIOL 111/111L-112/112L or ENV 101/101L-102/102L* Three hours lecture and three hours laboratory. This course examines the major groups of protists and animals regarding their structure, function, adaptation, ecology, and the evolutionary relationships among the groups.

BIOL 214 **HUMAN ANATOMY (3)** Three hours lecture. This course is a study of the structures of the body with emphasis on the organ systems involved in movement. Introductory material focuses on terminology, examining the hierarchical organization of the body and study of the four major tissues of the body. Subsequently, the interrelationships among the bones, joints, muscles, nerves, and blood supply of each body region are examined using a regional approach. This course is designed to meet the outcomes expected for pursuing upper-level courses in the HMSR majors.

BIOL 214L **HUMAN ANATOMY LABORATORY (1)** *Prerequisite or corequisite: BIOL 214.* Three-hour laboratory. The primary goal of the laboratory course is to provide a hands-on opportunity for students to apply the terminology and concepts covered during lecture. Accordingly, physical models, dissection, computer software, and Internet resources are used as part of a problem-solving pedagogy in which collaborative learning is emphasized.

BIOL 215 **HUMAN PHYSIOLOGY (3)** Three hours lecture. This course is a study of the function, integration, and interaction of various organ systems in the body. Introductory material

focuses on an overview of organ systems, the concepts of homeostasis and negative feedback, and fundamental chemical, physical, and cellular concepts. Subsequently, the physiology of the systems involved in movement and exercise, particularly the nervous, endocrine, muscular, cardiovascular, pulmonary, digestive, and urinary systems are emphasized. This course is designed to meet the outcomes expected for pursuing upper-level HMSR major courses.

BIOL 215L HUMAN PHYSIOLOGY LABORATORY (1) *Prerequisite or corequisite: BIOL 215.* Three-hour laboratory. The primary goal of the laboratory course is to provide a hands-on opportunity for students to apply the principles and concepts covered during lecture. Accordingly, physiological experiments, physical models, computer software, and Internet resources are used as part of inquiry-based, problem-solving pedagogies in which collaborative learning is emphasized.

BIOL 222 HUMAN ANATOMY AND PHYSIOLOGY I (3)
Three hours lecture. This course explores the fundamental structure and function of the human body, beginning at the cellular and molecular level of organization and progressing through integumentary, skeletal, nervous, and endocrine systems

BIOL 222L HUMAN ANATOMY AND PHYSIOLOGY LABORATORY I (1)
Prerequisite or corequisite: BIOL 222. Three-hour laboratory to accompany BIOL 222.

BIOL 223 HUMAN ANATOMY AND PHYSIOLOGY II (3) *Prerequisite: BIOL 222.* Three hours lecture. This course explores fundamental structure and function of muscular, cardiovascular, pulmonary, digestive, renal, and reproductive systems in human beings. Emphasis is placed on interrelatedness of organ systems and applications to allied health professions.

BIOL 223L HUMAN ANATOMY AND PHYSIOLOGY LABORATORY II (1)
Prerequisite or corequisite: BIOL 223. Three-hour laboratory to accompany BIOL 223.

BIOL 233 TROPICAL BIOLOGY (1-3) *Prerequisites: BIOL 111/111L- 112/112L, ENVS 101/101L-102/102L or equivalent.* This course examines extremely diverse ecosystems of the tropical forests which provide excellent opportunities to study several basic concepts of biological and environmental science. Students also study the unique fauna and flora of the tropical forest and learn how and why this ecosystem is threatened.

BIOL 240 INTRODUCTION TO BIOLOGICAL RESEARCH (1-3) *Prerequisite: BIOL 111/111L-112/112L and approval of the sponsoring instructor.* This course provides an independent opportunity to conduct literary research on a biological topic of interest. Credit is dependent upon the scope of the work but may not exceed three credit hours.

BIOL 305 PLANT ECOLOGY (4) *Prerequisite: BIOL 205/205L.* Three hours lecture and three hours laboratory. This course focuses on ecological constraints plants experience by virtue of their predominantly sessile lifestyle. Population dynamics, competition, plant-animal interactions, community structure, function, succession, and the influence of abiotic factors will be considered. Lab exercises emphasize problem-solving approaches to a series of field investigations. A small additional fee will be incurred for two field trips.

BIOL 309 INSECTS AND THE ENVIRONMENT (4) *Prerequisite: BIOL 111/111L-112/112L or ENVS 101/101L-102/102L; or by consent of instructor.* Three hours lecture and three hours laboratory. An introduction to insect structure, function, adaptation, and ecology, with an emphasis on insect interactions with their natural environments and with humans. Students will be trained in insect sampling, curation, and identification during labs, lectures, and field trips. The utility of insects in assessing the health of terrestrial and aquatic ecosystems (biomonitoring) will be a key component of the course.

BIOL 313 MARINE BIOLOGY (4) *Prerequisite: BIOL 111/111L-112/ 112L or ENVS 101/101L-102/102L.* Three hours lecture and three hours laboratory. This introduction to the marine

environment emphasizes the occurrence and distribution of marine organisms. Oceanographic principles are discussed, and special consideration is given to the biology of common plants inhabiting beaches, estuaries, and near-ocean waters in Atlantic, Caribbean, and Bahamian biota. The laboratory is conducted at a selected site on the ocean and in the estuary. A small additional cost will be incurred for a field trip.

BIOL 314 **BIOLOGY OF WEST INDIAN CORAL REEF ORGANISMS (3)**
(Winter Term) *Prerequisite: BIOL 111/111L or ENVS 101/101L or consent of instructor.* This course covers the organisms inhabiting the coral reefs of the West Indies and will be taught on San Salvador Island in the Bahamas. Field work is intensive, and skin diving and optional scuba techniques are employed. Limited collections are made and a paper on a topic of special interest is required. An additional fee will be charged to cover expenses.

BIOL 321 **GENERAL ECOLOGY (4)** *Prerequisite: BIOL 111/111L-112/112L or ENVS 101/101L-102/102L; Junior standing or higher.* Three hours lecture and three hours laboratory. This course is a survey of general ecological principles from the evolutionary perspective, incorporating multiple levels of analysis (e.g. population, community, etc.). Primary emphasis is placed on framing ecological theory in perspective with field models of ecological principles from historical and current research.

BIOL 323 **GENETICS (4)** *Prerequisite: BIOL 111/111L-112/112L or ENVS 101/101L-102/102L; Junior standing or higher.* Three hours lecture and three hours laboratory. Basic concepts and principles of prokaryotic and eukaryotic genetics are discussed, including Mendelian inheritance, polygenic inheritance, linkage and mapping chromosome aberrations, population genetics, DNA structure and replication, gene expression, mutation, gene regulation, recombinant DNA technology and the molecular basis of disease. Lab exercises utilize bacteria, plants, and animals as model systems.

BIOL 332 **VERTEBRATE ANATOMY (4)** *Prerequisite: BIOL 111/111L-112/112L.* Three hours lecture and three hours laboratory. This course provides a comparative study of the development, structure, and relationships of different organ systems in various vertebrate groups. Recommended for pre-medical, pre-dental, and medical technology students.

BIOL 333 **VERTEBRATE PHYSIOLOGY (4)** *Prerequisite: BIOL 111/ 111L-112/112L, CHEM 103-104, CHEM 105L-106L.* Three hours lecture and three hours laboratory. This course is a study of the cellular and molecular bases of organ system function in vertebrates, primarily humans. Emphasis is placed on nervous and endocrine control systems and the coordination of body functions. Clinical examples are frequently used.

BIOL 345 **ANIMAL BEHAVIOR (4)** *Prerequisite: BIOL 111/111L-112/112L or ENVS 101/101L-102/102L; Junior standing or consent of instructor.* Three hours lecture and three hours laboratory. This course includes a review of concepts of animal behavior and the methods employed to study behavior including an analysis of mechanistic and adaptive aspects of behavior in a variety of animal taxa. Emphasis is placed on analysis of current primary literature and development of critical tests of behavior.

BIOL 356 **NEUROBIOLOGY (4)** *Prerequisite: BIOL 111/111L-112/112L.* Three hours lecture and three hours laboratory. This course serves primarily as a companion course to Physiological Psychology (PSYC 355) but can also serve as a “stand-alone” course for anyone interested in the biology of the human nervous system. Introductory material focuses on an overview of the organization of the nervous system and on cellular aspects of neural function. Subsequent emphasis is on reflexes, sensory function, motor function, and sensorimotor integration.

BIOL 399 **INTERNSHIP IN BIOLOGY (1-6)** *Prerequisite: Juniors or seniors with a 2.25 minimum QPA; approval of written proposal by internship coordinator, supervising faculty, and School dean prior to registration.* This course is offered to qualified students allowing them to gain personal and practical experience in various areas of the biological sciences. Internships include but are not limited to research projects with professionals, laboratory analysis and management, conservation

