

RENEWABLE NATURAL RESOURCES • RNR

General education courses are marked with stars (*).

- ★ **1001 Natural Resource Conservation (3) F,S** Relationship of humans to the natural environment; ecology and conservation of soil, water, forest, range, wildlife, and fisheries resources.
- 1002 Issues in Natural Resource Management (1) F,S** Prereq.: for RNR majors only; credit or registration in RNR 1001. Discussions of the ecological, economic, sociocultural, and political factors that affect human relationships with the natural environment and the exploitation and conservation of water, forest, range, wildlife, wetland, and fisheries resources.
- 1003 Introduction to Wildlife Management (2) F,S** Life history, habitat requirements, and management of wildlife; emphasis on species of sporting and economic value; careers in wildlife management.
- 1004 Conservation of Forest Resources (2) F,S** Resources of forest and range land, including wood, wildlife, recreation, forage, and water; techniques of multiple-use management of forest lands.
- 2001 Dendrology (3) F** 1 hr. lecture; 6 hrs. lab. Students are responsible for paying for travel expenses associated with this course. Principal trees of the U.S.; their identification, classification, nomenclature, and distribution. Emphasis on southern timber species; common shrubs, ornamentals, woody vines, and some herbaceous plants will also be covered.
- 2002 Introduction to Fisheries and Aquaculture (3) F** 2 hrs. lecture; 3 hrs. lab. Students are responsible for paying for travel expenses associated with this course. History and scope of fisheries and aquaculture; production and harvest of economically important aquatic vertebrates and invertebrates; role of fisheries and aquaculture professionals in society.
- 2031 Principles of Wildlife Management (3) F** Wildlife conservation and management; ecology and management of wildlife in relation to the objectives of consumptive and nonconsumptive interest groups.
- 2039 Introduction to Renewable Natural Resource Policy (3) F** Development and implementation of policies in renewable natural resources; current environmental issues.
- 2043 Wood Science and Forest Products (3) S** 2 hrs. lecture; 3 hrs. lab. Structural components of wood and identifying characteristics; basic physical properties; manufacture and uses of forest products.
- 2061 Problems in Natural Resource Management (1-4) F,S,Su** Prereq.: permission of instructor. May be taken for a max. of 4 sem. hrs. of credit. Topics covered vary with the needs of the student and availability of faculty.
- 2101 Ecology of Renewable Natural Resources (3) F** Prereq.: BIOL 1202, 1209, RNR 1001, 1002. General ecological principles tied to the conservation and management of plant and animal populations; emphasis on how populations interact in communities and ecosystems.
- 2102 Natural Resource Measurements and GIS (3) F** 2 hrs. lecture; 3 hrs. lab. Students are responsible for paying for travel expenses associated with this course. Introduction to sampling techniques in measuring renewable natural resources, such as trees, wood products, forest stands, wildlife and fisheries populations, and water quality. Introduction to use of global information systems (GIS) and global positioning systems (GPS) applications in natural resource management.
- 3002 Silviculture (3) F** Prereq.: RNR 2101. Basic knowledge of personal computers and e-mail is assumed. 2 hrs. lecture; 3 hrs. lab. Students are responsible for paying for travel expenses associated with this course. A generalized approach to forest stand establishment and culture based on the ecological principles of regeneration and the identification of stand conditions that will satisfy specific goals and objectives for the forest.
- 3004 Photogrammetry, GPS and GIS (3) F** Prereq.: permission of department. 2 hrs. lecture; 3 hrs. lab. Students are responsible for paying for travel expenses associated with this course. Principles, interpretation, and use of aerial photos, Global Positioning Systems (GPS), and Geographic Information Systems (GIS) in stand measurements and forest management applications.
- 3005 Field Studies in Wildlife Habitat (2) Intersession only.** Prereq.: RNR 2001. Class meets 8 hrs. per day for 2 weeks at off-campus sites. Students are responsible for paying for travel expenses associated with this course. Identification of woody and herbaceous plants important to wildlife species and techniques used to quantify wildlife habitat; emphasis on collecting field data and plant identification in field setting to assess habitat quality for wildlife.
- 3018 Ecology of Louisiana Wildlife (4) S** Prereq.: RNR 2031. 2 hrs. lecture; 6 hrs. lab. Students are responsible for paying for travel expenses associated with this course. Habitat selection, food habits, and reproductive biology of selected species of amphibians, reptiles, birds, mammals, and fishes; emphasis on the diversity of niche exploitation strategies among these groups.
- 3034 Field Studies in Dendrology (1) S** Prereq.: RNR 2001. One week of field practice. Students are responsible for paying for travel expenses associated with this course. Review of species studied in RNR 2001; 60 to 70 more species of trees, shrubs, and woody vines indigenous to the southeastern U.S. studied; herbarium collection required.
- 3036 Field Studies in Mensuration (2) S** Prereq.: RNR 3103. Two weeks of field practice. Students are responsible for paying for travel expenses associated with this course. Exercises in designing and conducting timber and multipurpose cruises; boundary location and other types of land surveying associated with forest resource management.
- 3037 Field Studies in Silviculture (1) S** Prereq.: RNR 2001, 3002, and 3103. One week of field practice. Students are responsible for paying for travel expenses associated with this course. Field tours of a range of forestry practices and field experiences in various silviculture practices.
- 3038 Field Studies in Timber Harvesting (1) S** Prereq.: RNR 3002 and 3103. One week of field practice. Students are responsible for paying for travel expenses associated with this course. On-site studies of harvesting systems used in southern forestry; participation in timber harvesting; exercises in time and production.
- 3039 Field Studies in Wood Utilization (1) S** Prereq.: RNR 2043, 3002, and 3103. One week of field practice. Students are responsible for paying for travel expenses associated with this course. On-site studies of wood manufacturing facilities; exercises in product/raw material relationships.
- 3040 Silvicultural Prescriptions (1) S** Prereq.: RNR 3002 and 3103. One week of field practice. Students are responsible for paying for travel expenses associated with this course. Practical development of silvicultural prescriptions incorporating elementary economic analysis and silvicultural principles.
- 3041 Forest Practicum (1-4) F,S,Su** 1-4 weeks practicum. Students are responsible for paying for travel expenses associated with this course. May be taken for a max. of 4 sem. hrs. of credit. Field exposure to various aspects of forestry practices; intended for off-campus field, lab, workshop, or other intensive training in the field of forestry.
- 3044 Renewable Natural Resources Field Studies (1) S** Prereq.: RNR 3002, 3103. One-week field trip. Students are responsible for paying for travel expenses associated with this course. Insight into management objectives and issues in forested ecosystems not found in the West Gulf Coastal Plain; experience gained through on-site tours and discussions with various natural resource professionals.
- 3103 Forest Biometrics (2) S** Prereq.: RNR 2102, EXST 2201, and MATH 1431. Principles in measuring trees, stands, wood products, and other forest resources; sampling and inventory techniques; statistical inference.
- 3105 Forest Biology (2) S** Prereq.: RNR 2101. This is an 8-week course. The general University drop/add dates do not apply. The instructor will provide students with the drop/add dates established by the Office of the University Registrar. Topics include: tree anatomy, tree growth, tree physiology, forest genetics, and ecological principles specific to the understanding of forest ecosystems and sustainable management of forests.
- 3106 Timber Harvesting (2) S** 1 hr. lecture; 3 hrs. lab. Students are responsible for paying for travel expenses associated with this course. This is an 8-week course, the general University drop/add dates do not apply. The instructor will provide students with the drop/add dates established by the Office of the University Registrar. Methods of harvesting timber crops; logging equipment, planning, road layout, legal and social issues, environmental concerns, financial analysis of logging operations, and contracts; field trips and practical exercises included.
- 3107 Wood Procurement (2) S** Prereq.: RNR 3102. 1 hr. lecture; 3 hrs. lab. Students are responsible for paying for travel expenses associated with this course. This is an 8-week course. The general University drop/add dates do not apply. The instructor will provide students with the drop/add dates established by the Office of the University Registrar. Methods of purchasing and marketing timber crops; practicum of timber and pulpwood purchasing systems; value assessments, wood specifications, human relations, negotiations, ethics, competitive bidding; legal and social issues; contracts; records; wood storage; and global aspects; field trips and practical exercises included.
- 3108 Case Studies in Habitat Restoration (2) S** Prereq.: RNR 2101, 1 hr. lecture, 3 hrs. lab, 2 weekend field trips. Students are responsible for paying for travel expenses associated with this course. The general University drop/add dates do not apply because this is an 8-week course. The instructor will provide students with the drop/add dates established by the University Registrar. Principles related to the context, planning, design, and implementation of habitat restoration and mitigation; evaluation of habitat restoration efforts using the case study method.
- 4002 Fisheries Literature and Communication (3) F** 2 hrs. lecture; 3 hrs. lab. Organization and communication of technical fisheries literature.
- 4011 Wildlife Management Techniques (4) F** Prereq.: RNR 2031 and EXST 2201. 3 hrs. lecture; 3 hrs. lab. Weekend field trips. Students are responsible for paying for travel expenses associated with this course. Wildlife science and the scientific method, generating and testing hypotheses and predictions, statistical analysis of class generated data and scientific writing. Population inventories and analysis; harvest management; methods to capture animals and determine age and sex. Immobilization methods, marking methods, radio telemetry, and assessment of nutrition and condition. Use of GPS and GIS in wildlife ecology.
- 4013 Ecology and Management of Wetland Wildlife (4) F-O** 3 hrs. lecture; 3 hrs. lab. Students are responsible for paying for travel expenses associated with this course. History and value of wetlands, waterfowl, fur animals, alligators, wetland habitat management.
- 4020 Taxonomy and Ecology of Wetland Plants (4)** See BIOL 4020.

- 4021 Recreation in the Forest Environment (3) F** Prereq.: senior standing. 2 hrs. lecture; 3 hrs. lab. Students are responsible for paying for travel expenses associated with this course. Resource-oriented recreation in the forest; demand and supply; recreational planning and development of forest lands and waters; basic recreation management policies and principles.
- 4022 Principles of Aquaculture (4) S** Prereq.: 8 sem. hrs. of introductory chemistry and 8 sem. hrs. of introductory zoology and/or biology; or equivalent. 3 hrs. lecture; 3 hrs. lab with occasional extended field trips. Students are responsible for paying for travel expenses associated with this course. Principles underlying aquaculture of fish, crustaceans, and mollusks.
- 4023 Marine Fisheries Resources (3) S** Survey of the biology, harvest, and management of commercially important marine organisms throughout the world; emphasis on stock trends and the effects of biological and socioeconomic factors on development of management programs.
- 4025 Limnology (3) F** Prereq.: BIOL 1201, 1208 and CHEM 1201, 1202, 1212 or equivalent. Geomorphology, physiochemistry, biology, and ecology of inland waters.
- 4030 Tropical Forestry (1) V** Distribution and characteristics of tropical forests; conservation and sustained management; managing the tropical forest resources of the world.
- 4032 Forest Fire Protection and Use (2) S** 1 hr. lecture; 3 hrs. lab. Students are responsible for paying for travel expenses associated with this course. 8-week course. The general University drop/add dates do not apply. The instructor will provide students with drop/add dates established by the Office of the University Registrar. Forest fire control and use; emphasis on southern forests.
- 4033 Silviculture and Management of Hardwoods (4) S** Prereq.: RNR 3002 or consent of instructor. 3 hrs. lecture; 3 hrs. lab. Students are responsible for paying for travel expenses associated with this course. Extended field trips, one weekend field trip. Ecology, silviculture, and management of hardwood forest ecosystems; improvement, conservation, and use for forest products, wildlife habitats, and other amenities.
- 4035 Ecology and Management of Upland Wildlife (3) F** 2 hrs. lecture; 3 hrs. lab; extended field trips. Students are responsible for paying for travel expenses associated with this course. Ecology and management of wildlife in upland habitat; recreational leasing of forest land; current issues related to upland wildlife.
- 4036 Forest Management (4) F** Prereq.: ECON 2030 or AGECE 2003 or equivalent, RNR 3036, 3037, and 3040. 3 hrs. lecture; 3 hrs. lab. Compounding and discounting; management of a single stand, even-aged and uneven-aged management, decision criteria, and decision variables, management of an existing stand; forest taxation and valuation; management of many stands; harvest scheduling.
- 4037 Biology of Fishes (3) S** Prereq.: RNR 4145 or consent of instructor. Morphological, physiological, and behavioral adaptations of fishes to their environments; relationships between fish biology and fisheries management.
- 4038 Forest Resource Economics (3) F** Prereq.: ECON 2030 or AGECE 2003 or equivalent. Economic theory applied to forest resources and their utilization; structure of the forest products market, demand of forest products, timber supply and stumpage price; resource conservation and endangered species protection; taxation and government programs; international trade of forest products; demand for non-timber resources.
- 4039 Renewable Natural Resources Policy (3) S** History of forestry and forest legislation; development and evaluation of policies in forestry, wildlife, and fisheries; current issues.
- 4040 Fisheries Management (3) F** Characteristics of fisheries; dynamics of exploited stocks; socioeconomic aspects of fisheries; fisheries management and research techniques; managing wild fisheries stocks.
- 4042 Forest Products Marketing (3) S** Marketing principles; forest products industry, structure, marketing activities, and competition in a global environment.
- 4044 Mechanical and Physical Properties of Wood (3) V** Prereq.: RNR 2043 or equivalent. 2 hrs. lecture; 3 hrs. lab. Standard laboratory testing procedures, basic strength determination, working stresses, and timber design.
- 4045 Design and Control of Wood-Using Processes (3) V** Prereq.: RNR 2043. Relationship of basic physical properties of wood to utilization processes involving machining, gluing, and finishing.
- 4046 Chemical Properties of Wood (4) V** Prereq.: RNR 2043; and either CHEM 2060 or 2262. 3 hrs. lecture; 3 hrs. lab. Chemistry of wood, cellulose, lignin, and extraneous materials in wood and bark; chemical utilization and modification of wood.
- 4047 Seasoning and Preservation (4) V** Prereq.: RNR 2043 or equivalent. 3 hrs. lecture; 3 hrs. lab. Principles of lumber drying and wood preservation; economics of the treating industry.
- 4050 Industrial Forestry Operations (2) F** Survey of major forest products corporations; upper management personnel; corporate structure, philosophy, strategy; business outlook, employment and personnel trends; wood procurement, land management, environmental concerns.
- 4051 Wildlife Habitat Management (3) S** Prereq.: RNR 2001, 2031. 2 hrs. lecture; 3 hrs. lab. One weekend field trip. Students are responsible for paying for travel expenses associated with this course. Principles of managing landscapes to benefit a diversity of wildlife species, as well as specific management strategies to benefit single species; management scenarios for a variety of forested, open and urban habitats will be discussed.
- 4061 Problems in Natural Resource Management (1-4) F,S,Su** May be taken for a max. of 6 sem. hrs. credit. Independent or directed study.
- 4064 Forest Tree Improvement (3) F** Prereq.: RNR 3002 or permission of instructor. Genetic basis of variation in natural populations of forest trees; principles for using this variation to obtain genetically improved trees for reforestation; techniques of genetic testing, selection, breeding, and genetic engineering; methods for *in situ* and *ex situ* conservation of genetic resources.
- 4101 Integrated Natural Resources Management and Policy (4) S** Prereq.: RNR 2039, 3004 and senior status in School of Renewable Natural Resources. 2 hrs. lecture; 4 hrs. lab. Students are responsible for paying for travel expenses associated with this course. Development of problem solving skills for the management of renewable natural resources; application and integration of renewable natural resource management theory, policy and practices; analysis of management and policy decisions.
- 4102 Quantitative Silviculture (3) F** Prereq.: RNR 3040. Techniques in growth-and-yield modeling, density management, and creation of desired stand conditions.
- 4103 Conservation Genetics (3) S** Prereq.: BIOL 1201 and 1202. Application of genetic theory to the management of renewable natural resources; emphasis on fragmented populations, endangered species, maintenance of genetic variation.
- 4104 Forest Products Manufacturing (4) F** Prereq.: RNR 2043. 3 hrs. lecture; 3 hrs. lab. Principles and techniques in the manufacture of forest products including lumber, treated materials, furniture, adhesive, and composite materials such as plywood, particleboard, medium density fiberboard, oriented strandboard, and engineered lumber.
- 4105 Aquaculture Production Systems (3) S** Prereq.: BIOL 1201, 1208 or equivalent. General biology and culture techniques of the major global finfish, crustacean, molluskan, amphibian, and reptilian species.
- 4106 Techniques in Limnology and Fisheries (2) S** Prereq.: junior, senior, or graduate standing and permission of instructor. 1 hr. lecture; 1 hr. lab. Students are responsible for paying for travel expenses associated with this course. Quantitative techniques in habitat, water quality, and fish population assessment in freshwater ecosystems.
- 4107 Human Dimensions in Natural Resources (3) F** Prereq.: RNR 2039, 6 hrs. social science general education electives. Human behavior as related to management and use of natural resources.
- 4145 Ichthyology (4)** See BIOL 4145.
- 4151 Hydrology of Natural Landscapes (3)** Prereq.: AGRO 2051 and MATH 1431 or consent of instructor. 2 hrs. lecture; 3 hrs. lab. Hydrologic processes and principles of natural landscapes; understanding of characteristics and role of water in environment; concepts for water resources management and water quality protection.
- 4600 Topics in Marine Zoology (2-6)** See BIOL 4600.
- 4900 Watershed Hydrology (3) F** See ENVS 4900.
- 7001 Research Methodology (3) F** Planning, conducting, and reporting of research in the renewable natural resources.
- 7002 Advanced Silviculture (3) S-O** Silvics and silvicultural practices related to the commercially important Southern tree species, especially the pines; silvics and silviculture of several major commercial species outside the southern U.S.
- 7003 Advanced Forest Soils (3) S-B** Prereq.: AGRO 2051 or equivalent. 2 hrs. lecture; 3 hrs. lab. Students are responsible for paying for travel expenses associated with this course.
- 7004 Forest Ecophysiology (3) S-O** Prereq.: BIOL 3060 and RNR 3105 or consent of instructor. Whole-plant physiological responses that affect survival, growth, and reproduction of forest trees and other woody plants; effects of various forest site factors on physiological processes affecting survival, growth, and yield of trees; interpretation of response of trees to environmental stresses.
- 7005 Ecophysiological Methods/Instrumentation (2) S-O** Prereq.: credit or concurrent enrollment in RNR 7004 or PLHL 7014, or consent of instructor. 1 hr. lecture; 3 hrs. lab. Occasional extended field trips. Students are responsible for paying for travel expenses associated with this course. Research in whole-plant physiological ecology; presentation and use of selected field methods and instrumentation for eco-physiology or physiological plant ecology research.
- 7006 Behavioral Ecology (3) F-E** Behavioral ecology of plants and animals; evolution of behavior; behavioral strategies for survival and reproduction; importance of behavior to management and conservation strategies.
- 7010 Nutrition of Aquatic Animals (3) S-B** Prereq.: CHEM 2060 or 2261 or ANSC 4009. 2 hrs. lecture; 3 hrs. lab. Nutrition of cultured finfishes and shellfishes; nutrient requirements for growth and reproduction; digestion, metabolism, nutrition, and health interactions; feeds and feeding practices.
- 7011 Mammalian Ecology and Management (3) F** 2 hrs. lecture; 3 hrs. lab. Students are responsible for paying for travel expenses associated with this course. Management, ecology, and conservation of selected mammals of North America.
- 7012 Ecology and Management of Waterfowl (3) F-O** 2 hrs. lecture; 3 hrs. lab. Students are responsible for paying for travel expenses associated with this course. Behavioral and physiological adaptations of waterfowl throughout the annual cycle; population dynamics and habitat management; political and economic aspects of harvest management in North America.
- 7013 Wildlife Population Dynamics (3) F-O** Prereq.: EXST 7005 or equivalent. 2 hrs. lecture; 2 hrs. lab. Theories of population growth and regulation, population interaction, life tables, mortality rate calculation; band data analysis; population modeling.
- 7015 Ecology and Management of Upland Birds (3) F** 2 hrs. lecture; 3 hrs. lab. Students are responsible for paying for travel expenses associated with this course. Ecology and management of selected upland birds found in North America; students will develop a comprehensive management plan for a selected species.

7016 Current Topics and Techniques in Conservation Science (3) F 2 hrs. lecture; 3 hrs. lab. Scientific basis for the preservation of biodiversity; conservation strategies of government and non-government organizations; current status of biodiversity around the world; new techniques applicable to conservation biology; quantitative exercise with predictive demography (PVA), biodiversity at the population and community levels, fragmentation and other landscape effects, and genetics of small populations.

7018 Habitat Management Principles (4) F-E 2 hrs. lecture; 6 hrs. lab. *Students are responsible for paying for travel expenses associated with this course.* Principles of management applied to habitat evaluation; endangered species; mitigation; global trends of habitat quality and change.

7020 Ecology of Fishes (3) S-O Prereq.: BIOL 4253 or equivalent. Ecology of fish populations; interactions of fishes and their environment; behavioral adaptations of fishes.

7025 Advanced Aquaculture (3) Su Prereq.: RNR 4022 or equivalent. 4 hrs. lecture; 6 hrs. lab with occasional extended field trips. *Students are responsible for paying for travel expenses associated with this course.* Systems and practices for maximizing production and profit of cultured aquatic species; emphasis on international aquaculture systems, exotic species, and preparation of management plan for commercial aquaculture.

7026 Shellfisheries Aquaculture (4) F-O Prereq.: RNR 4022 and BIOL 4154; or equivalent. 3 hrs. lecture; 3 hrs. lab. Principles and practices for culturing commercially important crustaceans and mollusks including soft crabs, marine shrimp, freshwater prawns, crawfish, oysters, clams, and mussels; emphasis on environmental requirements, facility development, hatchery and production management, budgets, and processing and markets.

7027 Genetics and Culture of Finfish (4) S-O Prereq.: RNR 4022 and BIOL 2153; or equivalent. 3 hrs. lecture; 3 hrs. lab. Practical culture techniques and methods of breeding for genetic improvement of commercially important finfish.

7029 Advanced Topics in Renewable Natural Resources (1-4) V May be taken for a max. of 6 sem. hrs. of credit when topics vary.

7036 Advanced Topics in Forest Biometrics and Forest Management (3) V Prereq.: EXST 7014 and RNR 4036; or equivalent. Theory and practices involved in predicting growth and yield of forest stands; applications of linear and goal programming, biometrics, and capital budgeting to timber and multiple-use management.

7041 Advanced Wood Science (4) V Prereq.: RNR 2043. 3 hrs. lecture; 3 hrs. lab. Topics in wood science, including review of selected literature; anatomical, physical, and chemical properties of wood, with emphasis on wood products.

7061 Water Quality Management and Policy (3) See ENV5 7061.

7070 Graduate Seminar in Fisheries (1) F,S,Su May be taken for a max. of 4 sem. hrs. of credit when topics vary.

7071 Graduate Seminar in Forestry (1) F,S May be taken for a max. of 3 hrs. of credit. Pass-fail grading.

7072 Graduate Seminar in Wildlife (1) F,S,Su May be taken for a max. of 4 sem. hrs. credit when topics vary. Topics of current interest in wildlife science and management.

7151 Watershed Hydrology and Floodplain Analysis (3) Prereq.: AGRO 2051 or RNR 4151 or consent of instructor. 2 hrs. lecture; 3 hrs. lab. Also offered as ENV5 7151. Hydrologic processes and principles on watersheds and floodplains; interactions among water resources, water quality, land use, and management practices; hydrologic modeling of natural landscapes.

7320 Fisheries Oceanography (3) F See OCS 7320.

7424 Diseases of Aquatic Animals (3) Prereq.: consent of instructor. Basic microbiology and/or parasitology strongly recommended. 2 hrs. lecture; 2 hrs. lab. Same as PBS 7424. Identification, pathogenesis, and control of viral, bacterial, and parasitic agents causing diseases in aquatic animals.

8000 Thesis Research (1-12 per sem.) "S"/"U" grading.

8900 Research Problems in Natural Resources (1-3) F,S,Su May be taken for a max. of 6 sem. hrs. of credit. Pass-fail grading.

9000 Dissertation Research (1-12 per sem.) "S"/"U" grading.
