New Curriculum Guide
AES Graduate Program (NRES Concentration)

Agricultural and Environmental Systems – Natural Resources and Environmental Systems, MS
School/College: School of Agriculture & Environmental Science Degree(s) Offered: Master of Science
Graduate Coordinator: Dr. Louis E. Jackai, Email: lejackai@ncat.edu Phone: 336-285-4837
Department Interim Chair: Dr. Abolghasem Shahbazi Email: ash@ncat.edu Phone: 336-285-4851

Additional Admission Requirements:
- Students must have good background in basic sciences (Biology, Chemistry and Physics).
- A GRE score is recommended.

Program Outcomes:
- The production of advanced agricultural scholars that obtain professional and leadership roles with agricultural and environmental related entities. Additional outcomes include individuals that pursue doctoral studies and the valuable scholarly works produced by graduates of the program, through thesis and capstone project endeavors.

Degree Requirements
Total credit hours: 30

Thesis Option
Core Courses:
- Required hours (9): AGRI 604/ABM 705, AGRI 700, AGRI 780
Thesis Course:
  - NARS 797 – 6hours
Concentration Area Electives:
  - Concentration Area Elective Courses - 15 hours

Project Option
Non Thesis Project Course:
- NARS 796 - 3 hours
Concentration Area Electives:
  - Concentration Area Elective Courses - 18 hours

Natural Resources and Environmental Systems Concentration Course selections:
AGRI-604: Experimental Methods in Research
EASC-610: Sustainable Earth Credit
EASC-620: Environmental Studies I
EASC-621: Environmental Studies II
HORT 600: Advanced Techniques for Horticultural Crop Improvement
HORT 602: Grapes and Small Fruits
HORT-610: Commercial Greenhouse Production
HORT 620: Vegetable Production Credit
NARS 600: Mycology and Fungal Biotechnology
NARS 601: Plant Pathology & Modern Approaches to Plant Disease Control
NARS 703: Principles of Entomology and Pest Management
NARS 604: Crop Ecology
NARS 605: Breeding of Crop Plants
NARS 608: Special Problems in Natural Resources
NARS 610: Applied Spatial Statistics and GIS
NARS 618: Fundamentals of Agroforestry
NARS 685: Special Topics
NARS 700: Plant Pathology
SLSC 621: Soil Microbiology
SLSC 632: Soil Physics
SLSC 633: Soil Genesis, Classification and Land Use
SLSC 634: Soil Environmental Chemistry
SLSC 640: Wetland Management
HORT 700: Plant Biotechniques
AGEN 701: Soil and Water Engineering II
SLSC 710: Soils of North Carolina
AGEN 714: Applied Hydrogeology
SLSC 715: Soil Mineralogy
SLSC 717: Methodology in Soil, Plant and Water Analysis
EASC 718: Applied Environmental Microbiology
NARS 720: Graduate Seminar in Natural Resources
NARS 777: Special Problems
SLSC 727: Soil Fertility and Plant Nutrition
SLSC 734: Applied Environmental Chemistry
Directory of Graduate Faculty

- Dingha, Beatrice N., PhD, Auburn University; Research Scientist, Urban and Storage Systems entomology, Integrated Pest Management.
- Gayle, Godfrey A., PhD, North Carolina State University; Professor, Water resources engineering.
- Isikhuemhen, Omoanghe S., Institute of Microbiology, Prague; Research Professor, Mycology, mushroom biology & biotechnology.
- Jackai, Louis E.N., PhD, University of Illinois at Urbana-Champaign; **Professor & Program Coordinator**, Nutritional and applied insect ecology, vegetable crop entomology, Integrated Pest Management.
- Raczkowski, Charles W., PhD, North Carolina State University; Adjunct Associate Professor, Soil management, soil and water conservation and quality, sustainable cropping systems.
- Randle, William M., PhD., University of Minnesota; Professor, Plant breeding, genetics, nutrient management of crop plants, secondary metabolites of plants.
- Ravella, Ramesh, PhD, Pennsylvania State University; Research Scientist, Soil science, soil minerology, fertility management and environmental quality, biofuel crops and nanotechnology.
- Reyes, Manuel, PhD., Louisiana State University; Professor, Natural resources engineering, erosion modeling, conservation and hydrology.
- Shahbazi, Abolghasem, PhD, Pennsylvania State University; Professor, Bioprocess engineering and waste Recycling, Agricultural and Biological Engineering.
- Uzochukwu, Godfrey A., PhD, University of Nebraska-Lincoln; Professor, Soil minerology, land use and classification, earth science.
- Wang, Lijun, PhD, National University of Ireland; Professor, Bioprocess engineering; bioenergy and modeling.
- Yang, Guochen, PhD, University of Nebraska-Lincoln; Research Professor, Tissue culture, micro-propagation, plant growth regulation.