

Graduate Catalog | 2017-18



North Carolina Agricultural and Technical State University

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Graduate Catalog 2017-2018

The Graduate College



North Carolina Agricultural and Technical State University
1601 East Market Street
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Introduction

Welcome to the Graduate Catalog! The Graduate College exemplifies North Carolina A&T State University's tradition of excellence in learning, discovery and engagement. We are proud of our unique approach to the graduate enterprise that comprises the combined efforts of an intercultural faculty and staff, a diverse student population, and an unparalleled research and learning experience. Our alumni are leading thinkers and innovators in a variety of fields, seeking to improve life for all in the 21st century and beyond.

In 2016, the US News and World Report published its rankings that listed North Carolina A&T as the top ranked public HBCU in the nation and ranked several graduate programs: Rehabilitation Counseling(58), Industrial and Systems Engineering (66), Joint Master's in Social Work with UNCG (78), Electrical Engineering program (139). The US News and World Report publication ranked the online master's program in Information Technology at 28th place and the online Graduate Education programs at 153rd place.

In a special report released in 2015, Money magazine ranked A&T among North Carolina's top ten colleges. In 2016, Money and Essence magazines ranked A&T as one of the top 10 colleges for African Americans. In 2016, A&T was also included in Money magazine's Best Colleges For Your Money list.

In the 2013 ranking of national universities by Washington Monthly magazine, North Carolina A&T State University has been ranked No. 33 overall and No. 2 in the category of social mobility. Washington Monthly rates schools overall based on their contribution to the public good in three categories: social mobility – recruiting and graduating low-income students; research – producing cutting-edge scholarship and PhDs; and service – encouraging students to give something back to their country.

Our state of the art research centers and facilities include the NASA Center for Aviation Safety, the NSF Engineering Research Center for Revolutionizing Metallic Biomaterials, the NOAA-Interdisciplinary Scientific Environmental Technology Center, the Center for Post-Harvest Technologies, the Interdisciplinary Center for Entrepreneurship and E-Business and the recently established Joint School for Nanoscience and Nanoengineering.

The Graduate College at North Carolina A&T State University offers 9 doctoral degree programs (12 concentrations), 29 master's degree programs (53 concentrations), one post-master's certificate program, and 8 post-baccalaureate certificate programs in collaboration with the following colleges: College of Agriculture and Environmental Sciences, College of Arts Humanities and Social Sciences, College of Business and Economics, College of Education, College of Engineering, College of Health and Human Sciences, College of Science and Technology, and the Joint School of Nanoscience and Nanoengineering. Currently, six graduate programs including one doctoral program, five master's programs and one post-baccalaureate certificate program have been approved for distance education. Details regarding all our programs of study are provided in this catalog. NC A&T also offers a variety of financial assistance options for graduate study.

We invite you to explore the catalog as well as our website for more information on our academic programs, research opportunities, admission processes, and financial assistance. Please don't hesitate to call us at 336-285-2366 or email us at grad@ncat.edu if you have any questions.

Best wishes.

Sanjiv Sarin, PhD PE
Dean, The Graduate College

Academic Calendar

The University Calendar is subject to periodic revision. The updated academic calendars are available at <http://www.ncat.edu/registrar-office/academic-calendar/index.html>.

Catalog Policies and Disclaimers

The *North Carolina Agricultural and Technical University Graduate Catalog* contains academic policies and regulations that relate to graduate courses, graduate degree programs and graduate certificate programs. The Graduate College staff will be responsible for interpreting policies and regulations stated in the Catalog as needed.

The University reserves the right to change any of the rules and regulations of the University at any time, including those relating to admission, instruction, and graduation. The University also reserves the right to withdraw curricula and specific courses, alter course content, change the calendar, and to impose or increase tuition and fees.

The requirements specified in this *Catalog* apply to students who commence their studies at North Carolina A&T State University during the 2017-2018 academic year and who remain in continuous enrollment at the institution until they graduate. If requirements are changed, students may elect to comply with the new requirements or to remain under the requirements by which they are governed at the time of the change. A student who elects to comply with the requirements of a newer catalog must do so by declaring such intent in writing at least one semester prior to graduation. This declaration must be approved by the academic department and the Graduate College.

Students who change their program of study are bound by the requirements of their new program of study that are in effect the semester they officially begin studies in the new program. Furthermore, students who are readmitted to the University are bound by the program and degree requirements in force at the time of readmission.

Student's Responsibility

Each student is responsible for the timely completion of his or her academic program, for familiarity with the *Catalog*, for maintaining good academic standing, and for meeting all other degree requirements. Students are expected to assume academic and financial responsibility for the courses in which they enroll. While the student's advisor should be consulted regularly, the final responsibility remains that of the student.

A student is also required to have knowledge of and observe all regulations pertaining to campus life and student behavior. Each student is expected to participate in campus and community life in a manner that will reflect credibly upon the student and the University. All students are expected to abide by the Student Handbook.

Email is the official form of communication at the University; students are responsible for checking their ncat.edu email regularly. Students are expected to also maintain their contact information including mailing address and telephone number with the Office of the Registrar.

The University of North Carolina

The University of North Carolina is a multi-campus state university that encompasses 16 such institutions, as well as the NC School of Science and Mathematics, the nation's first public residential high school for gifted students. Chartered by the North Carolina General Assembly in 1789, the University of North Carolina was the first public university in the United States to open its doors and the only one to graduate students in the eighteenth century. The first class was admitted in Chapel Hill in

1795. For the next 136 years, the only campus of the University of North Carolina was at Chapel Hill. Additional institutions of higher education, diverse in origin and purpose, began to win sponsorship from the General Assembly beginning as early as 1877. Five were historically black institutions, and another was founded to educate American Indians. Some began as high schools. Several were created to prepare teachers for the public schools. Others had a technological emphasis. One is a training school for performing artists.

The 1931 session of the General Assembly redefined the University of North Carolina to include three state-supported institutions: the campus at Chapel Hill (now the University of North Carolina at Chapel Hill), North Carolina State College (now North Carolina State University at Raleigh), and Women's College (now the University of North Carolina at Greensboro). The new multi-campus University operated with one board of trustees and one president. By 1969, three additional campuses had joined the University through legislative action: the University of North Carolina at Charlotte, the University of North Carolina at Asheville, and the University of North Carolina at Wilmington.

In 1971 legislation was passed bringing into the University of North Carolina the state's ten remaining public senior institutions, each of which had until then been legally separate: Appalachian State University, East Carolina University, Elizabeth City State University, Fayetteville State University, North Carolina Agricultural and Technical State University, North Carolina Central University, the North Carolina School of the Arts (now the University of North Carolina School of the Arts), Pembroke State University (now the University of North Carolina at Pembroke), Western Carolina University, and Winston-Salem State University. In 1985 the NC School of Science and Mathematics was declared an affiliated school of the University; in July 2007 NCSSM by legislative action became a constituent institution of the University of North Carolina. All the schools and universities welcome students of both sexes and all races.

The UNC Board of Governors is the policy-making body legally charged with "the general determination, control, supervision, management, and governance of all affairs of the constituent institutions." It elects the president, who administers the University. The 32 voting members of the Board of Governors are elected by the General Assembly for four-year terms. Former board chairmen and board members who are former governors of North Carolina may continue to serve for limited periods as non-voting members *emeriti*. The president of the UNC Association of Student Governments or that student's designee is also a non-voting member.

Each of the UNC campuses is headed by a chancellor who is chosen by the Board of Governors on the president's nomination and is responsible to the president. Each university has a Board of Trustees consisting of eight members elected by the Board of Governors, four appointed by the governor, and the president of the student body, who serves *ex officio*. (The UNC School of the Arts has two additional *ex officio* members; and the NC School of Science and Mathematics has a 27-member board as required by law.) Each Board of Trustees holds extensive powers over academic and other operations of its campus on delegation from the Board of Governors.

In addition to its teaching role, the University of North Carolina has a long-standing commitment to public service. The UNC Center for Public Television, the UNC Health Care System, the cooperative extension and research services, nine area health education centers, and myriad other University programs and facilities reap social and economic benefits for the state and its people.

Mission

The mission of the University is shaped in large measure by the constitutional and statutory mandates by which public higher education is established and maintained. Article IX of the Constitution of the State declares:

Sec. 8. Higher education. The General Assembly shall maintain a public system of higher education, comprising The University of North Carolina and such other institutions of higher education as the General Assembly may deem wise.

Sec. 9. Benefits of public institutions of higher education. The General Assembly shall provide that the benefits of The University of North Carolina and other public institutions of higher education, as far as practicable, be extended to the people of the State free of expense.

This constitutional mandate for a public system of higher education is effected by Chapters 115 and 116 of the General Statutes. Chapter 115A, enacted in 1963, provides for a statewide network of community and technical colleges and institutes which offer two-year college transfer and technical and vocational programs. Chapter 116 of the statutes, as amended by the General Assembly effective July 1, 1972, provides in Section 3 that:

The board of trustees of the University of North Carolina is hereby redesignated, effective July 1, 1972, as the 'Board of Governors of the University of North Carolina.' The Board of Governors shall be known and distinguished by the name of 'the University of North Carolina' and shall continue as a body politic and corporate and by that name shall have perpetual succession and a common seal.

Section 4 of the statute provides for the University of North Carolina to be composed of the 16 public senior institutions in the state.

The Higher Education Reorganization Act of 1971, which placed those 16 institutions under one governing board, asserted the basic objectives and purposes for the University of North Carolina: to foster the development of a well-planned and coordinated system of higher education, to improve the quality of education, to extend its benefits, and to encourage an economical use of the state's resources.

Central to the process of strategic planning is the clarification of the overall mission of the University as a whole and the role and scope of the constituent institutions within that overall mission. As a part of the comprehensive mission review of 1992, the Board of Governors adopted a general mission statement for the University. This statement, with minor modifications, was given statutory status in 1995 when the General Assembly amended Chapter 116-1 of the General Statutes to include the following as the official mission statement of the University of North Carolina:

The University of North Carolina is a public, multi-campus university dedicated to the service of North Carolina and its people. It encompasses the 16 diverse constituent institutions and other educational, research, and public service organizations. Each shares in the overall mission of the University. That mission is to discover, create, transmit, and apply knowledge to address the needs of individuals and society. This mission is accomplished through instruction, which communicates the knowledge and values and imparts the skills necessary for individuals to lead responsible, productive, and personally satisfying lives; through research, scholarship, and creative activities, which advance knowledge and enhance the educational process; and through public service, which contributes to the solution of societal problems and enriches the quality of life in the State. In the fulfillment of this mission, the University shall seek an efficient use of available resources to ensure the highest quality in its service to the citizens of the State.

Teaching and learning constitute the primary service that the University renders to society. Teaching, or instruction, is the primary responsibility of each of the constituent institutions. The relative importance of research and public service, which enhance teaching and learning, varies among the constituent institutions, depending on their overall missions.

Board of Governors

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Blue, Kellie Hunt
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Burriss-Floyd, Pearl
Byers, C. Philip
Coward, Carolyn
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Davenport, Walter C.
Fetzer, Thomas H.
Goolsby, Thom
Grainger, H. Frank
Hardin, Tyler
Holmes Jr., James L.
Knott, Joe

Kotis III, W. Marty
Long, Steven B.
Maxwell, Ann
Mitchell, J. Alex
Murphy, Wendy F.
Nelson, Anna S.
Parrish, R. Doyle
Powers, David M.
Ramsey, Randall “Randy”
Rucho, Robert A.
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Steven Hopper, *Interim Vice President for Information Technology and CIO*

North Carolina A&T State University

North Carolina Agricultural and Technical State University is a learner-centered community that develops and preserves intellectual capital through interdisciplinary research, discovery, engagement and operational excellence. The university’s rich history dates back over 118 years. N.C. A&T was established as the A. and M. College for the “Colored Race” by an act of the General Assembly of North Carolina ratified March 9, 1891. It was in the fall of 1890, when the North Carolina General Assembly enacted a second Morrill Act that mandated a separate college for the colored race. (The College operated in Raleigh as an annex to Shaw University during the years 1890-1891, 1891-1892, and 1892-1893). A group of Greensboro citizens banded together to make a permanent home for the institution. Members such as Dr. DeWitt, a black dentist, C. Benbow and Charles H. Moore donated 14 acres of land for the site and an additional \$11,000 in cash that aided in construction of the buildings. This amount was supplemented by an appropriation of \$2,500 from the General Assembly. The plan was approved on March 9, 1891, and the first building was completed in 1893: the Agricultural and Mechanical College for the Colored Race (now North Carolina A&T State University) had found its new home.

In 1915 state legislators changed the college's name to The Agricultural and Technical College of North Carolina, and in 1967 elevated it to university status. N.C. A&T became a constituent university of The University of North Carolina in 1972.

Since its inception, A&T has maintained a tradition of excellence in education. Under the leadership of Dr. Harold L. Martin Sr., the university's current Chancellor, A&T continues to thrive as it sustains its rich legacy.

North Carolina Agricultural and Technical State University is a public, land-grant, doctoral research institution located in Greensboro, NC. The university is a member of the University of North Carolina system.

The university offers 117 undergraduate programs, 29 master's programs, and 9 doctoral programs. The academic programs are offered through the College of Agriculture and Environmental Sciences; College of Arts Humanities and Social Sciences; College of Business and Economics; College of Education; College of Health and Human Sciences; College of Science and Technology; College of Engineering; Joint School of Nanoscience and Nanoengineering; and the Graduate College.

A&T's outstanding student body is the primary strength of the university. Students are carefully selected from thousands of applicants annually. Once enrolled, they are taught and mentored by excellent faculty, the majority of whom have earned doctoral and other degrees from some of the nation's most prestigious graduate and professional schools.

A&T graduates the largest number of African-American engineers at the undergraduate, masters, and doctoral levels and psychology undergraduates in the nation. Through its nationally accredited AACSB College of Business and Economics, the institution is among the largest producers of African American certified public accountants. True to its heritage, North Carolina A&T is home to the largest agricultural school among HBCUs and the second largest producer of minority agricultural graduates. The institution was recently awarded a prestigious National Science Foundation's Engineering Research Center (ERC) grant for biomedical engineering and nanobio applications research.

The University has advanced to the forefront in the area of research, generating over \$60 million in research grants and contracts and more than \$6 million in appropriations for agricultural research and cooperative extension. It also generates contracts with major international companies, foundations, and federal agencies to secure funding to enhance academic programs and to provide student scholarships.

A&T is proud of its 40,000 alumni of record who occupy leadership positions across the country and around the world. These alumni spread the Aggie tradition throughout the nation, continuing to strive for excellence and to make their mark in society. Among its well-known successful alumni are the Rev. Jesse Jackson Sr., civil rights activist; U.S. Congressman Edolphus Towns (D-NY); retired Maj. Gen. Charles D. Bussey; retired Brig. Gen. Clara Adams-Ender; Ralph Shelton, founder of Southeast Fuels; Dr. Joe Dudley, Sr., founder of Dudley Products, Inc.; Alvin Attles, vice president of Golden State Warriors; former District Court Judge Lawrence McSwain; U.S. Congressman Jesse Jackson Jr. (D-ILL); former North Carolina Supreme Court Chief Justice Henry E. Frye; The Greensboro/A&T Four, Jibreel Khazan, Joseph McNeil, Franklin McCain and the late David Richmond; North Carolina legislator Alma Adams; Elvin Bethea, 2003 Pro Football Hall of Famer; Janice Bryant-Howroyd, founder and CEO of ACT 1 Group; Willie Deese, president, Merck Manufacturing Division; Donna Scott James, managing director, Lardon Associates LLC; Dmitri Stockton, president and CEO of GE Consumer Finance for Central and Eastern Europe; and the late astronaut Dr. Ronald E. McNair.

Twelve presidents/chancellors have served the university since its founding: Dr. John O. Crosby (1892-1896), Dr. James B. Dudley (1896-1925), Dr. Ferdinand D. Bluford (1925-1955), Dr. Warmoth T. Gibbs (1956-1960), Dr. Samuel DeWitt Proctor (1960-1964), Dr. Lewis C. Dowdy (1964-1980), Dr. Cleon Thompson Jr. (1980-1981, interim), Dr. Edward B. Fort (1981-1999), Dr. James C. Renick (1999- 2006), Dr. Lloyd V. Hackley (2006-2007, interim), Dr. Stanley Battle (2007- 2009) and Dr. Harold L. Martin Sr. (2009 – Present).

Mission

North Carolina Agricultural and Technical State University is an 1890 land-grant doctoral research university dedicated to learning, discovery, and community engagement. The University provides a wide range of educational opportunities from bachelor's to doctoral degrees in both traditional and online environments. With an emphasis on preeminence in STEM and a commitment to excellence in all its educational, research, and outreach programs, North Carolina A&T fosters a climate of economic competitiveness that prepares students for the global society.

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Nondiscrimination Policy

North Carolina Agricultural and Technical State University does not discriminate against employees, students, or applicants on the basis of age, color, disability, gender, gender identity, gender expression,

national origin, political affiliation, race, religion, sexual orientation, genetic information, veteran status, or any other basis protected by law. For inquiries regarding non-discrimination policies, contact the Title IX Coordinator at titleixcoordinator@ncat.edu

North Carolina Agricultural and Technical State University supports the protections available to members of its community under all applicable Federal and state laws, including Titles VI and VII of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, Sections 799A and 845 of the Public Health Service Act, the Equal Pay and Age Discrimination Acts, the Rehabilitation Act of 1973, and Executive Order 11246.

The Graduate College

Graduate education at North Carolina Agricultural and Technical State University was authorized by the North Carolina State Legislature in 1939. The authorization provided for training in agriculture, technology, applied sciences, and other approved areas of study. An extension of the graduate program approved by the General Assembly of North Carolina in 1957 provided for enlargement of the curriculum to include teacher education, as well as such other programs of a professional or occupational nature as might be approved by the North Carolina Board of Higher Education.

On July 1, 1967, the Legislature of North Carolina approved regional university status for the institution and renamed it North Carolina Agricultural and Technical State University. The University awarded its first master's degree in 1941 to Woodland Ellroy Hall. Since that time, over 8,000 students have received advanced graduate degrees from the University. A significant number of master's graduates have gone on to earn doctoral degrees in their chosen disciplines, either at North Carolina A&T or at other universities.

The Graduate College coordinates and administers advanced programs and course offerings leading to 9 doctoral, 29 master's and 9 certificate programs in collaboration with the College of Agriculture and Environmental Sciences; College of Arts Humanities and Social Sciences; College of Business and Economics; College of Education; College of Health and Human Sciences; College of Science and Technology; College of Engineering; and the Joint School of Nanoscience and Nanoengineering. Degrees offered include PhD, MA, MAEd, MAT, MBA, MS, MSA, and MSW. The Graduate Catalog provides detailed information about our programs, some of which are available online. NCA&T also offers a variety of financial assistance options for graduate study.

The Graduate College has an integrated and intercultural faculty and student body and beckons students from all over the world. The Graduate College provides a foundation of knowledge and techniques for those who wish to enhance their career options or to continue their education in doctoral programs. While studying at this university, it is expected that graduate students will (i) acquire special competence in their chosen fields; (2) further develop their ability to think independently and constructively; (3) develop and demonstrate the ability to collect, organize, evaluate, create, and report facts that will enable them to make a scholarly contribution to knowledge about their discipline; and (4) apply new and existing knowledge so as to contribute to their professions and to humankind.

In 1994, the first doctoral programs were authorized at North Carolina A&T State University in the Electrical Engineering and Mechanical Engineering disciplines. The first set of doctoral students enrolled the same year. The University granted its first Ph.D degrees to Sidney Llewellyn Bryson (Electrical Engineering), Alfred L. Burress (Electrical Engineering) and Christopher Grace (Mechanical Engineering) in 1999. The PhD in Industrial and Systems Engineering was added in 2000. In 2001, Electrical Engineering student Yaxi Shen became the first female to receive the PhD degree. In 2003, Tracie Jamison (Electrical Engineering) and Mary Murdock (Mechanical Engineering) became the first African American females as well as the first Title III HBGI Fellows to receive doctoral degrees. In 2005, two interdisciplinary PhD programs in Energy and Environment Systems and in Leadership Studies were added.

The PhD in Computational Science and Engineering was established in 2010. The UNC Board of Governors approved the establishment of the PhD in Nanoengineering in 2011. The PhD in Rehabilitation Counseling was established in 2013. A year later, the PhD in Computer Science was approved in 2014. Currently, over 375 doctoral students are enrolled at the university; over 60% are in STEM disciplines. Since the establishment of its first doctoral programs, the university has awarded over 300 doctoral degrees.

In 2004, based on its production of doctoral degrees and research, North Carolina A&T qualified for Doctoral Research University status established by the Carnegie Foundation. This status was formally approved by The University of North Carolina Board of Governors.

Fifteen persons have served as dean of the Graduate School since its beginning in 1939. They are Dr. Wadaran L. Kennedy (1939-1951), Dr. Frederick A. Williams (1951-1961), Dr. George C. Royal (1961-1965), Mr. J. Niel Armstrong (1965-1966), Dr. Darwin Turner (1966-1969), Dr. Albert W. Spruill, (1970-1993), Dr. Meada Gibbs (1993-1996), Dr. Charles Williams (1996-1997), Dr. Melvin N. Johnson (1997), Dr. Thoyd Melton (1998-2000), Dr. Kenneth H. Murray (2000-2006), Dr. Thomas Hassell (2006-2006), Dr. William J. Craft (2007 -2009), Dr. Kenneth Murray (2009-2009), Dr. Alan Letton (2010 - 2011), Dr. Sanjiv Sarin (2011-present).

Graduate Council

The Graduate Council is responsible for formulating all academic policies and regulations affecting graduate students, graduate courses, and graduate curricula. The council consists of faculty, students and administrative representatives from graduate programs. The Dean of the Graduate College serves as chairperson of the Council.

Accreditation and Institutional Memberships

North Carolina Agricultural and Technical State University is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award baccalaureate, masters, and doctorate degrees. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097 or call 404-679-4500 for questions about the accreditation of North Carolina Agricultural and Technical State University.

Programs and their accrediting agencies:

- American Chemical Society Certification Program – American Chemical Society
- Business and Accounting programs – AACSB International – Association to Advance Collegiate Schools of Business
- Child Development, Early Education and Family Studies – National Council for Accreditation of Teacher Education
- Computer Science – Computing Accreditation Commission, Accreditation Board for Engineering and Technology
- Construction Management – American Council for Construction Education, and National Association of Industrial Technology
- Didactic Program in Dietetics – Commission on Accreditation for Dietetics Education, American Dietetic Association
- Engineering: Architectural, Biological, Chemical, Civil, Electrical, Industrial and Systems, and Mechanical Engineering programs – Engineering Accreditation Commission, Accreditation Board for Engineering and Technology
- Family and Consumer Sciences – American Association of Family and Consumer Sciences
- Human Development and Services – Council on Accreditation for Counseling and Related Educational Programs, and Council on Rehabilitation Education
- Industrial Technology – National Association of Industrial Technology

- Journalism and Mass Communication – Accrediting Council on Education in Journalism and Mass Communication
- Landscape Architecture – American Society of Landscape Architects
- Media Program – Association of Educational Communications and Technology
- Music – National Association of Schools of Music
- School of Nursing – National League for Nursing Accrediting Commission
- Social Work – Council on Social Work Education
- Teacher education programs – National Council for Accreditation of Teacher Education, and North Carolina State Department of Public Instruction
- Theater Arts Program in Acting – National Association of Schools of Theater

University membership in Professional organizations:

- Accreditation Board for Engineering and Technology
- Accrediting Council on Education in Journalism and Mass Communication
- American Association of Colleges of Nursing
- American Association of Colleges for Teacher Education
- American Association of Collegiate Registrars and Admission Officers
- American Association of Family and Consumer Sciences
- American Association of University Women (graduates are eligible for membership)
- American Chemical Society
- American College Public Relations Association
- American Council for Construction Education
- American Council on Education
- American Dietetics Association
- American Library Association
- American Personnel and Guidance Association
- American Public Welfare Association
- American Society for Engineering Education
- American Society of Landscape Architects
- American Society of Mechanical Engineers
- Association of Educational Communications and Technology
- Associated Schools of Construction
- Association to Advance Collegiate Schools of Business International
- Association of American Colleges
- Association of College Unions International
- Association of Collegiate Deans and Registrars
- Association of Collegiate Schools of Architecture
- College Language Association
- Conference of Southern Graduate Schools
- Council on Accreditation for Counseling and Related Educational Programs
- Council of Graduate Schools
- Council of Historically Black Graduate Schools
- Council on International Education Exchange
- Council on Rehabilitation Education
- Council on Social Work Education
- National Association of Business Teacher Education
- National Association of College and University Business Officers
- National Association of College and University Food Service

- National Association of Industrial Technology, International Association of Technology Education
- National Association of Schools of Music
- National Association of Schools of Theatre
- National Association of State Universities and Land Grant Colleges
- National Association of Student Personnel Administrators
- National Commission on Accrediting
- National Consortium for Graduate Degrees for Minorities in Engineering and Science
- National Council for Accreditation of Teacher Education
- National Institutional Teacher Placement Association
- National League for Nursing
- North Carolina Association of Colleges and Universities
- North Carolina League of Nursing
- North Carolina Library Association
- North Carolina State Department of Public Instruction
- Southeastern Library Association
- Southern Association of Schools and Colleges, Commission on Colleges
- Southern Regional Education Board Council on Collegiate Education for Nursing
- Southern Universities Research Association
- University of North Carolina Exchange Program
- University of North Carolina Graduate Council

Degree and Certificate Programs Offered

The Graduate College at North Carolina A&T State University offers 9 doctoral degree programs (12 concentrations), 29 master's degree programs (53 concentrations), one post-master's certificate program, and 8 post-baccalaureate certificate programs in collaboration with the following schools and colleges: College of Agriculture and Environmental Sciences, College of Arts Humanities and Social Sciences, College of Business and Economics, College of Education, College of Engineering, College of Health and Human Sciences, College of Science and Technology, and the Joint School of Nanoscience and Nanoengineering. Currently, six graduate programs including one doctoral program, five master's programs and one post-baccalaureate certificate program are available through distance education.

In 2016, the US News and World Report published its rankings that included the following A&T programs: Rehabilitation Counseling was ranked 58th, Industrial and Systems Engineering was ranked 66th; the master's in Social Work (joint with UNCG) was ranked 78th; the Electrical Engineering program was ranked 139th. The US News and World Report publication ranked the online master's program in Information Technology at 28th place and the online Graduate Education programs at 153rd place. Furthermore, N.C. A&T is ranked #16 out of 26 programs in the Best Online Graduate Computer Information Technology Programs for Veterans, and #112 out of 156 Best Online Graduate Education Programs for Veterans.

A complete list of programs offered is given below.

Doctoral Degrees

- Ph.D. Computational Science and Engineering
- Ph.D. Computer Science
- Ph.D. Electrical Engineering
- Ph.D. Energy and Environmental Systems with concentrations in:
 - Atmospheric Sciences
 - Sustainable Bio Products

- Energy and Environmental Sciences and Economics
- Energy and Environmental Systems
- Ph.D. Industrial and Systems Engineering
- Ph.D. Leadership Studies *
- Ph.D. Mechanical Engineering
- Ph.D. Nanoengineering
- Ph.D. Rehabilitation Counseling and Rehabilitation Counselor Education

Masters Degrees

- MA English and African American Literature
- MAEd Elementary Education
- MAEd Reading Education
- MAT Master of Arts in Teaching* with concentrations in:
 - Biology Education
 - Business Education
 - Chemistry Education
 - Child Development: Early Education & Family Studies Birth-K
 - Elementary Education
 - English Education
 - Family and Consumer Sciences Education
 - History Education
 - Math Education
 - Physical Education
 - Special Education
 - Technology Education
- MBA Business Administration with concentrations in:
 - Accounting
 - Human Resource Management
 - Supply Chain Systems
- MS Adult Education
- MS Agricultural Education* with concentrations in:
 - Professional Licensure
 - Professional Service
- MS Agricultural and Environmental Systems with concentrations in:
 - Integrated Animal Health Systems
 - Agribusiness & Food Industry Management
 - Natural Resources and Environmental Systems
- MS Applied Mathematics
- MS Bioengineering
- MS Biology with concentrations in:
 - Biology
 - Industrial Biosciences (PSM)
- MS Chemical Engineering
- MS Chemistry with concentrations in:
 - Chemistry
 - Developmental and Applied Chemistry (PSM)
- MS Civil Engineering with concentrations in:
 - Civil Engineering
 - Systems Engineering

- MS Computational Science and Engineering with concentrations in:
 - Computational Science and Engineering
 - Systems Engineering
- MS Computer Science
- MS Electrical Engineering
- MS Food and Nutritional Science
- MS Industrial and Systems Engineering with concentrations in:
 - Industrial and Systems Engineering
 - Systems Engineering
- MS Information Technology *
- MS Instructional Technology *
- MS Mechanical Engineering with concentrations in:
 - Mechanical Engineering
 - Systems Engineering
- MS Mental Health Counseling with concentrations in:
 - Mental Health Counseling - Clinical
 - Mental Health Counseling - Rehabilitation
- MS Nanoengineering
- MS Physics
- MS School Counseling
- MS Technology Management* with concentrations in:
 - Technology Management
 - Construction Science and Management
- MSA School Administration
- MSW Social Work (Joint with UNCG)

Post Baccalaureate Certificate Programs

- Community College Teaching
- Family and Consumer Sciences*
- Supply Chain Management
- Advanced Waste Management
- Marriage and Family Counseling
- Rehabilitation Counseling and Behavioral Addiction
- Rehabilitation Psychology and Behavioral Medicine
- Vocational Evaluation and Work Adjustment

Post Masters Certificate Programs

- School Administration

* Approved for distance education

Distance Education

The Instructional Technology and Distance Education (ITSDE) office supports the use of educational technologies to enhance the teaching, learning, and research experiences of the faculty, students, and staff at the University. The ITSDE office provides support and infrastructure services to assist faculty with the development and continued maintenance of fully online, hybrid, and traditional face-to-face courses. The overall goal of the office is to enhance faculty-student interactions, increase student engagement with course materials, foster communication and collaboration, and increase opportunities for students to develop their skills for the workforce and lifelong learning.

The following units report to this office: Learning Management Systems, Instructional Design Services, Classroom Technology Services, Technology Training, Multimedia Support, and Program and Student Support for Distance Education.

ITSDE works in close cooperation with the academic colleges to administer online courses, certificates, and degree programs to students seeking convenient and cost-efficient opportunities to complete their education. All online courses at the University are delivered through an online Learning Management System (LMS) that allows the University to deliver quality instruction in a web-based format that mirrors instruction offered in traditional face-to-face settings. Students and faculty interact via online group discussion sessions, interactive video classrooms, streamed videos, and web conferencing sessions. Students are required to log into the LMS using a secured username and password to gain access to course materials, assignments, and other important items related to their classes.

Effective Fall 2016, the University offers 15 Distance Education (DE) programs including eight (8) undergraduate degree programs (offering 13 concentrations), five (5) master's degree programs (offering 10 concentrations), and two certificate programs as listed below.

Undergraduate degree programs:

- i. BS, Agricultural Education
 - o Professional Service
 - o Secondary Education
- ii. BS, Business Education
 - o Business Teacher Education
 - o Information Technology
- iii. BS, Electronics Technology
- iv. BS, Environmental Health and Safety
- v. BS, Geomatics
- vi. BS, Information Technology
- vii. BA, Liberal Studies
 - o Individualized Studies
 - o African American Studies
 - o Cultural Change
 - o Women's Studies
- viii. BSN, Nursing (RN-BSN Completion Option)

Graduate degree programs:

- i. MS, Agricultural Education
 - o Prof Licensure
 - o Prof Service
- ii. MS, Information Technology
- iii. MS, Instructional Technology
- iv. MS, Technology Management
 - o Construction Science and Management
- v. MAT Teaching
 - o Business Education
 - o Elementary Education
 - o Family and Consumer Sciences Education
 - o Technology Education

Certificate programs:

- i. Environmental Health and Safety (undergraduate)
- ii. Family and Consumer Science (post baccalaureate)

Summer School

The Office of Summer Sessions is committed to providing exemplary services to fulfill the educational and professional development needs of a diverse community of learners. The Office of Summer Sessions additionally provides a unique opportunity for the University to expand its capacity to offer courses for traditional and non-traditional students by offering educational opportunities during the summer in compact sessions.

Summer Sessions helps bridge the academic year by creating a continuous flow of learning opportunities for the university and the community-at-large while serving as a catalyst for the advancement and enhancement of lifelong learning. Consequently, students may optimize their efforts to remain on schedule for projected degree completion thus promoting higher graduation rates.

The Office of Summer Sessions features several convenient sessions of varying lengths: two five-week sessions; one two-week intersession; and one 10-week dual session. Students may enroll in a maximum of seven credit hours in each five-week session and the dual session, and one three-credit hour course during the intersession. These sessions facilitate study aimed at meeting a wide range of educational, career, and personal enrichment goals. Sessions are specifically designed for community-wide accommodation through courses, study abroad experiences, internships, and other programs that promote diversity among populations.

Continuing Education

The Office of Continuing Education and Professional Development (OCEPD) offers certificate programs, courses, workshops and seminars for the working adult. The purpose of OCEPD is to extend the resources of the university to the community in accessible formats, and to assist the professional community stay abreast of cutting edge knowledge and practice. In collaboration with the academic departments, schools and colleges of the university, OCEPD offers professional development programming through industry partnerships, high tech training seminars, short courses, workshops, conferences, camps and pre-college activities for youth that supports learning, discovery and engagement.

The Office of Continuing Education and Professional Development sponsors both non-credit and contract credit programming. Continuing Education Units (CEU) may be awarded for successful completion of non-credit activities. OCEPD maintains permanent transcripts of all CEU earned.

Expenses and Financial Assistance

North Carolina A&T State University is a publicly supported institution. Tuition and other required student fees meet only a part of the total cost of education of students enrolled. For each full-time student enrolled in an institution of the University of North Carolina, the State of North Carolina appropriates significant amount of public funds.

Tuition and Fees

Tuition rates are based on whether or not the student is a resident of North Carolina. Tuition rates for non-residents are significantly higher than that for a resident. Tuition and fees for Distance Education students are billed separately. Furthermore, student enrolling in courses in summer courses are billed at the Summer School rates.

Tuition and fees are subject to change without prior notice. For an updated listing of tuition and fees, see the University Treasurer's website at <http://www.ncat.edu/divisions/business-and-finance/comptroller/treasurer/tuition-and-fees/index.html>.

North Carolina A&T State University provides billing statements electronically through its Online Payments system. Students and Authorized Users will receive an email notification each time that a new billing statement is available. Payments must be submitted by the scheduled due date to avoid cancellation of classes.

Auditing Courses

A part-time student must pay all fees, including tuition, which would be charged to a student taking the course for credit. A full-time student is not required to pay additional fees for auditing. A change from credit registration to audit will not be permitted after late registration ends. An auditor is not required to participate in class discussions, prepare assignments, or take examinations.

Indebtedness to the University

A student may not be permitted to attend classes or final examinations after the due date of any unpaid obligation. If special financial arrangements have been made, failure to comply with these arrangements as stipulated will result in the student forfeiting his/her privilege to receive special financial arrangements for deferments in the future.

Students are required to pay for any loss or damage to University property cost due to abuse, negligence, or malicious action at replacement, in addition to being subject to disciplinary action for such loss or damage.

Diplomas and transcripts are withheld until the student has paid in full all fees and charges due to the University.

Refunds

A student is entitled to a refund when the account is overpaid and a credit balance is created. A student must officially withdraw from courses and, as appropriate, withdraw from the University by the posted deadline to avoid academic or financial responsibility. A student who withdraws from the University may be entitled to a partial refund of tuition and fees based on date of withdrawal; the refund schedule is available from the Treasurer's office.

Students who are awarded Federal Financial Aid and choose to withdraw will also be subject to the "Return of Title IV Funds Policy". In such cases, the Financial Aid office recalculates eligibility of Title

IV funds. This may result in an unpaid balance due to the university. For details, students are referred to the Financial Aid office.

Veterans

Meeting the needs of students who receive educational benefits from the U.S. Department of Veteran Affairs is a high priority for the Office of Veteran and Disability Support Services at North Carolina A&T State University. Our Veteran Support Services office is committed to providing services and educational benefit programs for all eligible enrolled U.S. Veterans, National Guardsmen, Reservist and their eligible dependents. Students receiving veterans benefits are advised to consult the Veteran Support Services office or visit their website at <http://www.ncat.edu/student-affairs/student-services/ovdss/veteran/veterans-support.html>.

Full time Faculty and Employees

All permanent employees who are regularly scheduled to work at least 30 hours each week, and have met their probationary period, are eligible to participate in the Tuition Waiver Program (TWP). The purpose of the TWP is to provide an opportunity for eligible employees to take a course and have the tuition and fees waived at North Carolina A&T State University or any of the other 15 constituent institutions of the University of North Carolina. Participation is voluntary. Tuition waiver is allowed for an academic year of fall semester, spring semester, and the summer sessions that follow, or courses taken as distance education. During the period from the fall semester through the second session of summer school, no more than two (2) waivers or two (2) classes may be approved. The Treasurer's Office should be consulted for more information.

Residence Status for Tuition Purposes

The basis for determining tuition charge is whether a student is a resident or a non-resident for tuition purposes. Initial classification as either a resident or non-resident for tuition purpose is based on information provided on the application for admission. If a student chooses to petition a reclassification of his or her residence status for tuition purposes they must complete and submit the Residence and Tuition Status Application along with all required supporting documentation to the Office of Undergraduate Admissions no later than 10th day of the term for which they wish to be considered.

Residency decisions are based on North Carolina statutes (G.S. 116-143.1). The residency classification officer reviews each application on an individual basis using the guidelines provided within these statutes. Additional information regarding residency may be found in the North Carolina State Residence Classification Manual available at http://www.northcarolina.edu/legal/residence/committee/manual/Residence_Manual_Aug_2010.pdf.

FAFSA Application

Students may apply for need-based and some non-need-based financial aid by completing the Free Application for Federal Student Aid (FAFSA). Students should complete this form immediately after January 1. There is no processing fee and all graduate students are encouraged to complete the application. Students can submit the FAFSA on the Web (<http://www.fafsa.ed.gov>) or mail the form to the Federal Processing Center. North Carolina A&T State University school code is **002905**. The University's priority deadline for receipt of the FAFSA is **March 15th**; however, students who miss the deadline are still encouraged to complete and mail the FAFSA as soon as possible.

A financial aid award will not be offered until a student is admitted to the University. Therefore, it is important that the admission procedure be completed as soon as possible. A student enrolled as a "Post-baccalaureate Studies (PBS)" student is not eligible to receive Federal and State financial aid unless

enrolled in a Teacher Certification Program. All students must re-apply for financial assistance each academic year and separately for summer school.

Federal Work Study

The Federal Work-Study program provides students with an opportunity to work part-time to assist with educational costs. The program consists of jobs on and off campus for community service opportunities. Eligible students must be enrolled at least part-time, eligible to receive federal aid and have demonstrated financial need as determined by the FAFSA application. For more information, students are referred to the Financial Aid office and to their website at <http://www.ncat.edu/admissions/financial-aid/aid/fed-wk-study-prog.html>.

Loans

The Financial Aid Office administers loan programs and disburses the funds through the Federal Direct Loan Program to Graduate Students. The Financial Aid Office will determine if you are eligible for this loan based on information reported on the FAFSA.

Students are notified of the amount of aid received through the award notification. The award notification indicates the gross amount of the loan for the fall and spring semester and/or summer sessions. The student's account and bill indicate the actual amount received. For more information on the terms and conditions of federal loan programs, students are advised to consult the Financial Aid office and their website at <http://www.ncat.edu/admissions/financial-aid/aid/loans/sub-vs-unsub.html>.

Scholarships and Fellowships

The majority of scholarships and fellowships at NC A&T State University are awarded through the academic department. Students are strongly urged to contact their academic department for additional scholarship information. Students receiving an outside scholarship should forward a copy of the notice to the Student Financial Aid Office. The scholarship will be included in the student's award and may cause an adjustment to the current award package. All scholarship checks should be made payable to North Carolina A&T State University and mailed to the Treasurer's Office. The check should include the student's name and social security number.

Graduate Assistantships

Graduate assistantships are available to graduate students who have been admitted to a graduate degree program at A&T, maintain full time status, are in good academic standing, and are making satisfactory progress toward their degrees. Graduate students who have completed their course work requirements and are working on their thesis or dissertation with less than full-time course load may be eligible for teaching and research assistantship in their final semester. The types of graduate assistantships are described below.

Graduate Teaching Assistantship (GTA):

A Graduate Teaching Assistantship's primary purpose is to assist the student in strengthening and successfully completing his/her academic program. It includes activities that are relevant to the student's program of study, provides training to the student in teaching, and contributes to the university's teaching mission.

GTAs are selected based on their academic credentials and perform duties in their area of expertise. GTAs receive a stipend and in-state tuition. In-state tuition may be paid by the hiring unit or the Graduate College. The Graduate College also awards a limited number of tuition remissions on a competitive basis to out-of-state students that pays the difference between out-of-state and in-state tuition.

Graduate Research Assistantship (GRA):

A Graduate Research Assistantship's primary purpose is to assist the student in strengthening and successfully completing his/her academic program. It includes activities that are relevant to the student's program of study, provides training to the student in research, and contributes to the university's research mission.

GRAs are selected based on their academic credentials and perform duties in their area of expertise. GRAs receive a stipend and in-state tuition and is consistent with the approved award/contract from the funding agency. The Graduate College also awards a limited number of tuition remissions on a competitive basis to out-of-state students that pays the difference between out-of-state and in-state tuition.

Graduate Administrative Assistantship (GAA):

GAAs support a variety of academic and non-academic functions of the university. Their duties may be unrelated directly to teaching or research. GAAs are selected based on criteria established by the hiring units. The Graduate College does not prescribe stipend levels for GAAs; instead they are compensated according to the hourly rates established by the Division of Human Resources. GAAs are employed on campus in positions designated as Student Assistant IV or Student Assistant V. In addition to positions posted independently by hiring units, the Division of Student Affairs coordinates the posting of positions at <http://www.ncat.edu/student-affairs/student-services/career-services/pdf/StudentEmployment.pdf>. The Graduate College does not award tuition remission to GAAs.

Appointment

North Carolina Agricultural and Technical State University provides equal employment opportunities for all persons regardless of race, religion, color, national origin, gender, age, disability, veteran status, political affiliation, genetic information, sexual orientation or sexual identity.

All GTAs and GRAs should receive academic year appointments (if appointed in fall) or spring appointments (if appointed in spring). A separate appointment for summer term can be made depending on the source and availability of funding and approval of the supervisor.

Notification of awards should be in the form of a contract using the form authorized by the Graduate College. The notification should contain information about the appointment period, compensation, expected duties, teaching and research load, review and renewal procedures, and tuition remission, if any.

Renewals

Continuation of graduate assistantship support from year-to-year or semester-to-semester is not guaranteed. Renewal of support is based on a number of factors including: (a) satisfactory progress toward degree completion, (b) satisfactory completion of prior assistantship responsibilities, (c) enrollment status, (d) academic standing, (e) completion of training requirements, (f) evaluation and (g) availability of resources.

Termination

A Graduate Assistantship may be terminated before the expiration of its designated term due to loss of funding, for cause, for academic delinquency, by written notice, and by voluntary mutual agreement.

- *Loss of Funding.* A graduate assistantship may be terminated due to a loss, reduction, or reallocation in appropriation, grant, contract, gift, or other funds with which to support the appointment.
- *Cause.* The following are examples of sufficient cause for removal: incompetence, inefficiency, wanton carelessness or neglect of duty, violation of research ethics, violation of safety protocols, insubordination, and repeated or extended absence.

- *Academic Delinquency.* Not making satisfactory academic progress toward a degree or is otherwise not in good academic standing.
- *Voluntary Agreement.* With the agreement of the University, an appointment may be terminated by the voluntary written resignation of the GA.

If an assistantship is terminated for any reason in the middle of the semester, in-state tuition and any out-of-state differential tuition remission will be prorated.

Appeals

The Assistantship & Fellowship Committee of the Graduate Council considers appeals of termination of Graduate Assistantships.

Before filing an appeal, a graduate student is expected to attempt to resolve the termination issue with the hiring faculty member and/or department chairperson and dean of the academic unit in which the assistantship is assigned. A graduate student who is unable to resolve issues with the hiring faculty member and/or department chairperson has thirty (30) calendar days from the date of termination, or thirty (30) calendar days after the adverse decision at the department or college level to file an appeal with the dean of the Graduate College. Graduate students are responsible for submitting a written appeal with the required documentation to the dean of the Graduate College so that they are postmarked or hand-delivered by the deadline date. If a request for appeal is not postmarked or hand-delivered by this deadline, it will not be considered. The decisions of the Assistantship & Fellowship Committee are final and do not set precedent; each case is considered on its own facts and merits.

Compensation

In accordance with the Office of Management and Budget (OMB) requirements, the University's Equal Employment Opportunity (EEO/AA) Statement (<http://www.ncat.edu/hr/policies/index.html>) and EEO/AA certification in the Federal Government's System for Award Management (SAM.gov), compensation for Graduate Assistants must be treated the same under like circumstances. This principle requires the University and its academic units to hire graduate students doing similar kinds of work through the same mechanism at similar rates, including pay scales and tuition charges. Equal compensation is mandated by the following: the Equal Pay Act of 1963, Title VII of the Civil Rights Act of 1964, the Age Discrimination in Employment Act of 1967, and Title I of the Americans with Disabilities Act of 1990. Therefore, the University must pay equal compensation to Graduate Assistants who perform jobs that require substantially equal skills, effort and responsibilities, and that are performed under similar working conditions within the University.

Departments should develop and monitor their procedures for consistency and to ensure that individuals are paid in accordance with published pay scales and in accordance with the legal requirements cited above. Graduate assistants in similar disciplines and at the same stage in their career will receive the same amount of assistantship. For example, all GRAs with similar skills, effort and responsibilities in a PhD program in the same discipline shall be paid the same.

All GTAs at each degree level will receive the same amount of assistantship as specified by the Graduate College. The Graduate College will also prescribe a minimum level of compensation for GRAs. The salaries will be competitive and ensure fairness. Each college or academic discipline may set a higher stipend rate for GRAs in consultation with the Graduate College. The Graduate College will ensure equity for GRAs within the following broad discipline categories used by the Council of Graduate Schools: (i) Physical and Life Sciences, Health Sciences, Mathematics, Computer Science, Agriculture, (ii) Engineering, (iii) Social Sciences, (iv) Arts and Humanities, (v) Education, (vi) Business, (vii) Other (Family and Consumer Sciences, Communications/Journalism, Public Admin, Social Work).

Tuition Remission

Tuition remission refers to funds allocated by the Graduate College to offset a graduate student's tuition. A GTA or GRA who is in-state for tuition purpose may receive an in-state tuition remission that pays the entire in-state tuition. On a competitive basis, selected GRAs and/or GTAs who are out-of-state for tuition purpose may receive the differential out-of-state tuition remission, in other words, the difference between the total tuition for an out-of-state student and in-state student.

Evaluation

An assistantship necessitates periodic assessment and feedback regarding a student's performance. Each department is responsible for review and evaluation of graduate assistants and may include written assessment of work by faculty supervisor, classroom visitation by designated faculty members, and written student evaluations. The evaluations must be submitted to the Graduate College at the end of each semester.

Training

All graduate assistants are required to undergo training as specified by the Graduate College.

To keep the GTA appointment, the initial GTA training must be completed during the first week of the semester. In addition, GTAs will be required to attend specified training sessions throughout the academic year. Before assuming teaching assistant duties that require contact with students, a non-native, non-primary-English-speaking graduate student must also be certified as proficient in oral and written English.

To keep the GRA appointment, the initial GRA training must be completed during the first week of the semester. In addition, GRAs will be required to attend specified training sessions throughout the academic year. GRAs will be required to undergo training in research ethics, conflict of interest, responsible authorship, intellectual property rights, publications and patent policy, and other topics mandated by federal and state regulations. All GRAs are required to receive lab safety training (laser safety, chemical hazard safety, etc.) before working in any lab.

Administration

All assistantships must be recommended by a senior university administrator (member of the Chancellor's Cabinet or a Dean). All assistantships must be funded from approved university accounts with adequate funding in the assistantship line item. Personal funds cannot be used to support assistantships. The Graduate College will administer all assistantships and will be responsible for post audit reports to track and monitor compliance with these policies, adherence to fiscal regulations, etc.

Code of Conduct

A Graduate Assistant's teaching, research, and administrative activities are subject to the ethical precepts and codes of the academic profession, the laws of the State of North Carolina regarding its employees, the laws of the United States, and University policies governing institutional obligations. Violation of any of these requirements constitutes a basis for disciplinary action in accordance with procedures set forth in the University's policies. In their interactions with students, faculty, and all other members of the university community, GAs are expected to conduct themselves with professionalism, ethics, sensitivity and thoughtfulness.

Academic Policies and Regulations

Graduate Admissions

Graduate education is intended to develop specialized skills, knowledge and expertise in a particular discipline. Therefore the graduate admission process is designed to collect credentials regarding the applicant's academic preparation, intellectual ability, experience, and motivation to undertake a rigorous academic program of study. Admission of graduate students is the responsibility of the Dean of the Graduate School with the advice and assistance of the Graduate Council and of the graduate faculty members of the departments, programs, and curricula authorized to offer graduate degree programs. The application materials for each prospective student receive individual attention and are reviewed by the Graduate Coordinator in consultation with the admission committee consisting of graduate faculty within the intended program to identify whether the applicant's background matches the intended program of study. The program coordinator submits a recommendation based on a holistic review of each application. This review includes the applicant's academic qualifications, the applicant's interest and experience relative to the program, and the capacity of the program. The applicant's academic qualifications are judged on a number of criteria that may include grades on individual courses, overall grade point average, accreditation status of prior colleges/universities attended, standardized test scores, language proficiency, strength of recommendation letters, and additional criteria specified by the academic program. Each program weighs each of these criteria differently. The applicant's interest and experience relative to the program is assessed through the personal essay, history of prior research and work experience, clinical skills, and in some cases, through personal interviews. The academic program determines its capacity for admitting new students based on its current resources and enrollment of continuing students in the program. After receiving a recommendation from the program coordinator, the Graduate School reviews the application file to ensure that the appropriate procedures have been followed. This process ensures that all applications to graduate degree programs undergo two levels of review prior to an admission decision. Applicants who are offered admission will be selected on the basis of the University's analysis of the applicant's qualifications for satisfactory performance in the specific college, school, department, curriculum, or other program to which the applicant seeks admission. Admission to the University also requires satisfactory evaluation of campus safety related responses.

NCA&T considers all applications for graduate admissions without regard to race, ethnicity, color, gender, gender identity, sexual orientation, national origin, disability, veteran's status, age, religion, or creed.

Types of Admission: Students are admitted to the Graduate College in three categories: unconditional, conditional, or non-degree seeking. The minimum criteria for each type of admission are listed below. However, satisfying minimum admission requirements does not guarantee admission. Admissions decisions are based on a competitive evaluation and may be limited for such reasons as capacity constraints. Specific requirements for admission to each graduate program may be more restrictive and are subject to change.

Unconditional Admission

Unconditional admission may be granted to an applicant who possesses:

- a. A bachelor's degree from an accredited four-year college or university as determined by a regional accrediting agency, or from selected international colleges/universities including three-year colleges and universities in Europe participating in the Bologna Process;
- b. Satisfactory cumulative Grade Point Average (GPA) in previous college work. A graduate degree, or at least 12 credit hours of graduate coursework taken post-baccalaureate while in graduate status, may supersede the undergraduate record in evaluating credentials for admission;

- c. Satisfactory evaluation of standardized test scores, recommendation letters, application essay, and other factors as specified by the intended program of study; and
- d. English language proficiency.

Conditional Admission

Conditional admission may be granted when the Graduate College determines the student has not met the requirements for unconditional admission. This may be due to the lack of accreditation of the prior college/university, minimal relevance of previous education/degree to proposed program of study, or lack of academic strength as demonstrated by previous GPA or test scores. Conditionally admitted students will be subject to admission conditions that may include one or more of the following:

- a. Pass examinations to demonstrate knowledge in specified areas;
- b. Take specified undergraduate and/or graduate courses to improve his/her background. This will increase the total credit hours required beyond what is published in the catalog;
- c. Conditionally admitted students will be dismissed without a probationary period if the conditions placed on their admission have not been met within the prescribed time period.

Satisfying conditional admission status

The Graduate College grants full graduate standing when all requirements of the conditional admission are met. All admission conditions must be satisfied during the first twelve (12) attempted credit hours. The student must also maintain a satisfactory academic record (3.0 GPA) on all course work taken in a graduate classification.

Non-Degree Seeking Admission

Non-Degree Seeking or Post Baccalaureate Studies (PBS) admission is available for those who want to take courses for personal enrichment, professional growth, or certification requirements. However, at the discretion of the academic department, PBS students may apply up to twelve (12) credit hours to any certificate or degree program to which they are admitted in the future, subject to the Graduate Transfer Credits policy. Some academic departments restrict their courses to degree-seeking students only. Admission as a PBS student requires an application, application fee and undergraduate degree transcript. The PBS option is not available to international students on F-1 visa. Furthermore, all forms of financial assistance including federal financial aid are not available for PBS students.

Admission of Non-Degree Seeking Students to Degree Programs

Students who are currently or have previously been enrolled as non-degree seeking students (PBS) and wish to obtain a graduate degree must formally apply to the graduate program with a new application, application fee and required documentation.

Deferral of Admission

An admitted student may submit a written request to the Graduate College to defer admission to a future semester. Admission deferrals may be requested for a maximum of one year. The Graduate College must approve this request. A student's admission may be rescinded if the student does not enroll in the semester in which he/she received admission and does not receive approval of deferral.

Readmission

A student must reapply for admission if his/her enrollment has been terminated for any reason including non-compliance with the continuous registration policy. A student must also reapply if he/she does not enroll in the semester for which he/she was admitted and has not received a deferral of admission. In such cases, the student must submit the complete application packet including the application fee as if applying for the first time. However application materials submitted within one year prior to readmission may be transferred to the new application.

Application deadlines

Two types of deadlines apply as follows.

- a. Priority Deadline is the date by which complete applications must be submitted to receive priority review for merit based graduate awards and for admission to space constrained graduate programs. Applications received after the priority deadline will be given consideration based on availability of funds and/or space in the program.
- b. General Deadline is the date by which all application materials including original documents must be received by the Graduate College for admission decision. Some academic programs have earlier deadlines, in which case the complete application must be submitted by the posted departmental deadline.

Application Requirements

All applicants must apply using the online admission portal that is accessible from the Graduate College's website. The application and admission process consists of a departmental evaluation based on the application, recommendation letters and unofficial copies of transcripts and other materials followed by a final review of all original documents by the Graduate College. All programs require the graduate admission application, application fee, transcripts, and a personal statement. Most programs also require recommendation letters. Many programs require standardized test score and/or resumes. Some programs have additional requirements such as an on-campus interview. The Graduate College maintains program specific requirements. All documents submitted to the Graduate College will be retained and will not be returned to the applicant nor released to a third party, except as legally required. A general list of application documents is set out below.

- a. Application for admission to the Graduate College;
- b. Application fee;
- c. Official academic transcripts from previously attended colleges and universities. International transcripts may require an external evaluation as determined by the Graduate College. Applicants who enrolled at North Carolina A&T State University after 1988 are not required to submit their original North Carolina A&T transcript;
- d. Recommendation letters preferably from faculty or professionals who are familiar with the applicant's work;
- e. Standardized graduate test scores as appropriate for intended program. The scores must be officially issued and current (no more than five years old);
- f. Personal statement of interest in the program, as required;
- g. All applicants are required to demonstrate proficiency in English. Applicants receiving any degree from an accredited U.S. college or university or from a college or university located in a country with English as an official language and the language of instruction in higher education (a list of countries is maintained by the Graduate College) will not require additional documentation. Otherwise, a satisfactory TOEFL (<http://www.ets.org/toefl>), IELTS (<http://www.ielts.org>) or PTE Academic (<http://pearsonpte.com/PTEAcademic/Pages/home.aspx>) score is required. TOEFL, IELTS and PTE Academic scores must be officially issued and are reportable for a period of two years from the date of the exam;
- h. Satisfactory criminal background check if requested by the Graduate College;
- i. International applicants are required to provide A&T with verification that the required funds are available to support the proposed program of study by submitting the Financial Guarantee Form to the International Students and Scholars Office. The applicant must also provide information regarding current visa status;
- j. Additional requirements as specified by the academic program.

Graduate Admissions Appeals

An applicant to any graduate program who has been denied admission may appeal the University's decision but only on the grounds that the denial was based on a violation of the University's published admission policy or that it resulted from a material procedural error in the admissions process. The appeal must be in writing, must set forth with specificity the grounds for the appeal, and must be submitted to the Dean of the Graduate College within 30 days after the appellant has received the letter communicating the University's decision.

Upon receipt of the appeal, the Graduate College Dean will consider the recommendations of the Admissions Committee of the Graduate Council and will communicate his or her decision in writing to the applicant-appellant within thirty (30) calendar days of receipt of the appeal. The Dean may consult the appropriate program coordinator, department chair and/or academic school/college Dean in arriving at a conclusion. If the Graduate College Dean's decision is in favor of the applicant, the applicant will be admitted to the next available term. After hearing the Dean's decision, the applicant may appeal to the university Provost within two weeks of receiving the decision.

Appeals must be received prior to the term for which the applicant is seeking admission. If there is insufficient time to complete the appeal process before the beginning of the term for which the applicant seeks admission, the Dean of the Graduate College may decline to review the appeal.

Enrollment, Residence, Leave and Withdrawal

Full time enrollment

A graduate student is considered to be enrolled full-time when registered for a minimum of nine (9) semester credit hours during a regular fall/spring semester. If a student is full time in the previous spring semester and is registered for the following fall semester, he/she is considered to be full time in the summer. Otherwise, a student is considered to be enrolled full-time in each summer session if he/she is registered for a minimum of six (6) credit hours. During the semester of graduation, registration in any number of credit hours will be considered full-time enrollment. Students seeking federal financial aid must adhere to the enrollment requirements prescribed by the University's financial aid office.

Maximum Course Load

No more than 15 credit hours may be taken in any fall or spring semester and no more than seven (7) credit hours may be taken in any summer session without the written permission of the graduate program coordinator and/or department chair and the dean of the Graduate College.

Residence Requirement

The residence requirement for a graduate program is met when a student has earned at least 60% of the required degree credits for his or her program through enrollment in courses offered by North Carolina A&T State University. If the program is offered as part of a consortium, then a student should earn at least 60% of the required degree credit for his or her program through enrollment in courses offered by A&T or any of the universities in the consortium.

Continuous Enrollment/Registration

Graduate students must continue to register each semester (except summer terms) until all degree requirements are completed. Students must be enrolled at A&T during the semester of graduation.

Leave of Absence

In special circumstances, a student in good academic standing may request a leave of absence from his/her program of study. The student must notify the graduate program coordinator, department chair and Dean of the Graduate College. The request should be made at least one month prior to the semester

involved. The request should be endorsed by the student's graduate advisory committee, program coordinator and/or department chair, and the Graduate College. The time that the student spends on an approved leave of absence will be included in the maximum time allowed to complete the degree.

Withdrawal from the University

A student who wishes or is asked to leave the University at any time during the semester shall complete and file official withdrawal forms. The forms must be completed and submitted to the Office of the Registrar. Failure to execute and file these forms in a timely manner will result in a student incurring the penalty of receiving an "F" for each course in which he or she was enrolled during the semester in question.

Graduation Requirements

Graduation and commencement dates

Graduate students will be awarded their degrees or certificates on four official graduation dates each year: June, August, December and May. These dates coincide with the end of the fall and spring semesters and twice during the summer session. Formal commencement exercises are held at the end of the spring and fall semesters. Any student who graduates during summer sessions is eligible to participate in the December commencement. Students must be enrolled in the semester in which they apply for graduation.

Student's responsibility to know university policies and regulations

It is each student's responsibility to be knowledgeable of the published academic regulations and requirements set forth in the Graduate Catalog, its revisions, university policies and regulations, and specific requirements of the academic programs. The student is also responsible for compliance with announcements published by the department, Graduate College, Registrar, Provost and other university offices. Lack of knowledge of regulations and requirements does not excuse the student from complying with academic regulations and meeting the requirements.

Applicable Graduate Catalog and program requirements

The Graduate Catalog provides general information only and does not constitute an irrevocable contractual agreement between a student and North Carolina A&T State University. A student may expect to earn a degree in accordance with the requirements of the curriculum described in the official Graduate Catalog in effect when he or she first enters the university, or in any subsequent catalog published while he or she is a student. The student may elect to follow a newer catalog with the approval of his/her department chair. However, the time limitation for graduation as indicated later in this policy will not be extended. The specific curricular requirements are stated in the student's Plan of Study. The University reserves the right to make changes in curricula, degree requirements, course offerings, or academic regulations at any time when, in the judgment of the graduate faculty, the Chancellor, and/or the Board of Trustees, such changes are in the best interest of the students and the University. When that occurs, the revised catalog will apply to new students.

Plan of Study

All graduate students are required to file a Plan of Study by the end of the second semester after admission to a program of study. Failure to submit the Plan of Study will prevent the student from enrolling in classes for his/her third semester. The Plan of Study is established in consultation with the advisor, graduate coordinator and/or department chair. The Plan of Study is based on the Graduate Catalog requirements but may be structured to meet the specific needs of the student. The Plan of Study may be amended at any time before the student applies for graduation with the approval of the advisor, graduate coordinator and/or department chair. A student's Plan of Study must be approved by his/her advisor and chairperson. Responsibility for meeting all academic requirements for a selected program rests with the student.

Change of Program

After a student has been admitted to a degree program, he/she may petition to change degree programs using the appropriate form available from the Graduate College. The completed form must be approved by the Department Chairs of the old and new programs. The petition to change programs must include a new Plan of Study for the new program and should be submitted and approved prior to the start of the effective semester. A student who petitions successfully for transfer to a new degree program must complete the new program requirements in force at the time of the change of program. Any courses credited from the old program must meet the time frame requirements for completion of the new program. This process of changing programs only applies to changing from one program to another in a related discipline at the same degree level. It cannot be used to change academic status or degree level.

Time Limitations

The master's degree program must be completed within six (6) successive calendar years. Doctoral programs must be completed within ten (10) successive calendar years. Normally, this time limit will apply even if a student changes his/her program of study. When the program of study is interrupted because the student has been drafted into the armed services, the time limit shall be extended for the length of time the student has been on active duty, if the candidate resumes graduate work no later than one year following his/her release from military service. A student may petition for an extension of the time limits under extenuating circumstances, for example, a long term illness.

Graduation requirements

Students intending to graduate must comply with all graduation requirements stated below:

- Have an approved Plan of Study filed in the Graduate College at least one semester prior to graduation
- Have transfer of credits, if any, approved and noted on Plan of Study at least one semester prior to graduation
- Conditionally admitted students must have been approved for unconditional status at least one semester prior to graduation.
- Submit the Report of Doctoral Dissertation Committee or Thesis Committee (as appropriate)
- Resolve prior semester incomplete grades
- Be in good academic standing
- Pay required tuition and fees and any other pending payments
- Meet all requirements specified on the Plan of Study with an overall Grade Point Average of 3.00 or higher
- Apply for graduation by the posted deadline
- Enroll in the semester of graduation

Application for Graduation and Graduation Clearance

The University requires a non-refundable \$60 Graduation Fee when applying for graduation. The application for graduation must be made by the posted deadline (see for example, [University Academic Calendar](#)). Students who fail to apply by the application deadline may apply for graduation by the extended deadline on payment of an additional \$20 late fee. The University cannot ensure that the names of late filing applicants will appear in the Commencement Program. The fee is assessed for students once the first step is completed.

A student who applies for graduation but is unable to complete degree requirements in the current semester must withdraw the graduation application by the posted deadline. The student will be required to reapply for graduation in a later semester and pay the graduation fee again.

The student's diploma will be mailed to the address provided on the graduation application. Regalia and other academic paraphernalia is ordered from the University Bookstore. For information on ordering contact them by phone at (336) 334 - 7593 or visit them online at <http://www.ncat.edu/divisions/business-and-finance/aux-services/bookstore/>.

Course Numbering

Lower Division Courses

100-199 level courses are intended primarily for freshmen. Upper division students may enroll in these courses. Graduate students may enroll in these courses with their advisor's approval, but they are not available for graduate credit.

200-299 level courses are intended primarily for sophomores. Certain classes are closed to freshmen who lack the designated prerequisites or whose majors are outside the unit offering the course. This information is available in the *Undergraduate Bulletin*, or from the student's academic advisor. Upper division students may enroll in these courses. Graduate students may enroll in these courses with their advisor's approval, but they are not available for graduate credit.

Upper Division Courses

300-399 level courses are intended primarily for juniors. Prerequisites and other restrictions should be noted before registration. Graduate students may enroll in these courses with their advisor's approval, but they are not available for graduate credit.

400-499 level courses are intended primarily for seniors and include capstone courses, study abroad, etc. Prerequisites and other restrictions should be noted before registration. Graduate students may enroll in these courses with their advisor's approval, but they are not available for graduate credit.

If undergraduate and graduate courses need to be co-listed, then this can occur between 400- and 600-level courses. Undergraduates may take 600-level courses with senior status and a minimum 3.25 GPA or above.

Graduate Courses

600-699 courses are master's level courses open to all graduate students. Undergraduate students may take these with senior status and a minimum 3.25 GPA or above, or in special cases as part of an accelerated bachelors-master's program.

700-799 courses are master's level courses open to all graduate students.

800-899 courses are doctoral level courses open to all graduate students.

900-999 courses are doctoral level courses open only to doctoral students.

Each graded and non-graded course will be assigned to a faculty member. In particular, non-graded courses such as Special Topics, Seminar, Independent Study, Thesis, and Dissertation will associate a separate section with each faculty member.

Course Prefixes

Prefixes will contain no more than four alpha characters. Departments should consult with the University Registrar when establishing courses which will require a course prefix other than the departmental abbreviations.

Graduate Grades and Grade Point Average

Responsibility for grades

A student's performance in a course must be evaluated resulting in a course grade by the instructor of record assigned to the course. The only exception is when the instructor is not available due to illness or termination from employment. In this event, the department chair or dean shall request the change of grade.

A request for a change of grade must be initiated by the instructor of record assigned to the particular course. The request must be approved by the instructor's department chair and dean. The only exception to an instructor's involvement in seeking a change of grade is when a grade appeal results in a change of grade. In this event, the department chair or dean shall request the change of grade.

The registrar will email the instructor and department chair (or dean if there is no department chair) to confirm that the change of grade originated from the instructor who signed the change of grade form.

Each instructor who assigns grades has the responsibility to implement grading procedures that are fair and equitable, and to provide a reasonable evaluation of the student's performance in the course. The instructor is expected to inform all students at the beginning of the semester of the means to be used to determine grades in each course or section. This information must be included in the instructor's course syllabus.

Types of grades

The following grades may be awarded in graduate courses.

Graded courses

This section provides a list of all grades that may be awarded for graded courses, that is, courses that are taken both for credit and for a letter grade. Letter grades A, A-, B+, B, B-, C+, C and F correspond to a specified grade point value. The student's Grade Point Average (GPA) is calculated by adding quality points for all courses where the quality points for a course equal the grade point value times semester credit hours. Some grades do not have associated quality points and are not included in GPA calculation.

- A (Excellent); 4.0 points
- A-; 3.7 points
- B+; 3.3 points
- B (Average); 3.0 points
- B-; 2.7 points
- C+; 2.3 points
- C (Below average); 2.0 points
- F (Failure); 0 points
- AU (Audit); not included in GPA
- I (Incomplete); not included in GPA
- CR (Transfer Credit); not included in GPA
- CE (Credit by Examination); not included in GPA
- W (Withdrawal Voluntary); not included in GPA
- WM (Withdrawal, Medical); not included in GPA
- WA (Withdrawal, Administrative); not included in GPA

Non-Graded courses

Certain courses are non-graded or taken for credit only. These include Continuation/Residency, Dissertation, Internship/Field Experience, Project, Seminar, Supervised Research, Supervised Teaching,

and Thesis. The following grades may be awarded for courses that are non-graded or are taken for credit only.

- S (Satisfactory)
- U (Unsatisfactory)

Additionally, the following examinations, if required in the program, are recorded as either being Satisfactory (or completed) or Unsatisfactory (not completed): Comprehensive Examination, Qualifying Exam, Preliminary Exam.

The S or U grade for a non-graded or credit-only course or for a required examination will have no effect on the student's grade point average. However, courses with a required course with an S/U grade must be completed with a grade of S. A student with a grade of U in a required course will not have fulfilled his/her Plan of Study and will not be permitted to graduate. Similarly, required examinations must be passed before a student is permitted to graduate.

Attempted Credit Hours

All courses taken, irrespective of grade, are included in calculating attempted credit hours. Furthermore, all courses in which a grade of C or higher or a grade of S is earned are included in calculating earned credit hours.

Graduate Credit

Only courses numbered 600 or higher can be counted toward completion of graduate degrees or certificate programs. Grades for courses taken for graduate credit while an undergraduate at North Carolina A&T State University, in Post Baccalaureate Studies (PBS) classification, or transferred from other universities must have a grade of "B" or better to be transferred. "B-" is not a "B" or better.

Grade Point Average

To determine the Grade Point Average for a term, first determine the total quality points earned in the term by multiplying the number of grade points awarded for each course by the course's assigned number of semester credit hours and add the resulting quality points earned for each course in the term. Then divide the total quality points earned in the term by the number of semester credit hours attempted (for courses that award letter grades) in the term. The following rules apply in calculating graduate student GPA.

- All courses numbered 600 or higher taken in a graduate classification or for graduate credit as an undergraduate are included in the graduate GPA.
- When students repeat a graduate course, all grades including the last grade will be utilized to calculate the cumulative graduate average.

Incomplete Grades

Students cannot graduate with an "I" grade on their transcript. "I" grades must be resolved during the next semester after taking the course. Otherwise, a grade of "F" or "U" will be automatically assigned. When a grade of "I" converts to "F", this may result in an action of probation or dismissal for the semester in which the conversion takes place, even if the student is not registered for the semester in which it converted.

Change of Grade

A change of grade, if any, must be made within one year from the date the original grade was received.

Course Repetition

Graduate courses may be repeated only once with the permission of the student's graduate program coordinator and/or department chair and approval of the Dean of Graduate Studies. Degree credit for repeated courses will be given only once, but the grade assigned for each enrollment shall be permanently recorded. Both the original grade and the grade received in the repetition will be used in calculating the overall GPA.

A student may not repeat a course in which “C” or above was earned. A student may repeat a required course in which “F” or “U” or “W” was earned. A student may not repeat the course more than once. If a student attempting a course for the second time (after a grade of F, U or W) either fails or withdraws from the course, he/she may be dismissed from the degree program. All hours attempted in graduate courses and all grade points earned are included in the computation of the cumulative average of a graduate student.

Failure to meet course requirements

A student who stops attending a course and/or fails to meet course requirements without officially withdrawing from the course may be assigned a grade of “F” or “U”.

Failing to withdraw by deadline

Students who withdraw from the University prior to the published deadline to withdraw from the University shall receive a “W” in all classes enrolled. Failure to execute and file these forms in a timely manner will result in a student receiving an “F” or “U” for each course in which he or she was enrolled during the semester in question.

Graduate Transfer Credits

This policy applies to course credits transferred from other institutions. The University is not obligated to accept any courses for transfer credit. However, provided the student meets the residency requirement, the graduate program coordinator and/or department chair may recommend up to 40% of the required credit hours for a degree program at North Carolina A&T State University be accepted for transfer credit from another institution, subject to approval by the Dean of the Graduate College. The limitations on transfer credits are as follows:

1. For a course to be transferred, it must have been earned at a regionally accredited, or otherwise approved, university with a grade of “B” or higher (“B-” is not equivalent to a “B”). Courses that have been graded on a Pass/Fail or Satisfactory/Unsatisfactory basis will not be accepted for transfer.

Although the credit for a course may transfer, the grade will not be used to calculate the cumulative Grade Point Average (GPA) at North Carolina A&T State University except when the course is a consortium course. The number of semester credit hours transferred from courses taken in a quarter system will be two-thirds of the quarter hours.

2. With the approval of the academic department and the Graduate College, graduate level credit hours may be credited to a graduate program at NCA&T provided the total number of credit hours transferred do not exceed 40% of the total degree requirements at NCA&T. Credit hours transferred may not have been used to fulfill requirements of any previous earned degree at another institution. However, subject to approval by the academic department and the Graduate College, up to 24 credit hours of graded course work from a previous earned master’s degree may be approved for transfer credit towards a post-baccalaureate doctoral program.
3. A maximum of 12 credit hours taken while a student is in non-degree seeking or Post Baccalaureate Studies (PBS) status may be credited to a degree program.

4. The request must include an official copy of the transcript and published course descriptions along with the request.
5. Transferred courses must be graduate-level courses relevant to the graduate degree being sought. Each graduate program will recommend transfer credits based on an evaluation of the course description and whether the course was taken within the last five years.

Academic Eligibility

Good academic standing

To maintain good academic standing and to meet the requirements for graduation, a student must demonstrate acceptable performance in course work after being admitted to a graduate program. This requires a minimum cumulative Grade Point Average (GPA) of 3.00 or higher in all graduate course work.

Furthermore, good academic standing requires satisfactory progress in the overall graduate program. The student's advisor or graduate advisory committee may render judgments as to whether satisfactory progress is being made toward the degree, taking into account all aspects of academic performance and promise, not necessarily course work alone. Departments may recommend termination of a student's graduate status at any time if the student is not making satisfactory progress toward the degree. Examples of unsatisfactory progress may include, but are not limited to, inadequate GPA, inadequate research and/or research skills, failure to obtain satisfactory grades in required courses for the program, or failing the candidacy, comprehensive, or final oral examination.

Academic Probation

Any student who has either (i) attempted 18 or fewer credit hours and received a semester GPA of less than 3.0 or (ii) attempted more than 18 credit hours and received less than a 3.0 cumulative GPA will be placed on academic probation.

- A student on academic probation with 18 or fewer attempted credit hours will be required to earn a semester GPA of 3.0 or higher by the end of the next regular (non-summer) semester to return to good academic standing
- A student on academic probation with more than 18 attempted hours will be required to improve his/her cumulative GPA to 3.0 or higher by the end of the next regular (non-summer) semester to return to good academic standing.
- Students on academic probation may not enroll in more than 9 semester credit hours.

Dismissal

A student who is placed on probation after attempting 18 credit hours and who fails to improve his/her cumulative GPA to 3.0 or higher by the end of the probationary period, that is, by the end of the next regular (non-summer) semester, will be dismissed.

Departments may also recommend dismissal of a student at any time if a student:

- is conditionally admitted and fails to meet the conditions of his/her admission;
- is not making satisfactory progress toward the degree, for example, inadequate progress on research projects, failure to obtain satisfactory grades in required courses, or failing the candidacy, comprehensive, or final oral examination;
- receives an "F" grade in a required course;
- fails to maintain continuous registration without an approved leave of absence;
- fails to complete program requirements in the maximum allowed time for the degree; or

- is guilty of ethical misconduct or violates the North Carolina A&T State University's Student Handbook.

Readmission after Academic Dismissal

A student who is dismissed for academic reasons will be eligible to submit a new application for admission to a degree or certificate program after one academic year and may be admitted only upon the recommendation of the major department chair or graduate coordinator and with the approval of the Dean of the Graduate College.

Appeals

An academically dismissed student may appeal the decision according to the process outlined in the Graduate Student Appeals policy.

Thesis, Dissertation and Comprehensive Exam

Theses and dissertations

A thesis or dissertation presents the results of the student's original investigation in the field of major interest. It must represent a contribution to knowledge, be adequately supported by data and be written in a manner consistent with the highest standards of scholarship.

Thesis/Dissertation Research Topic

The thesis/dissertation research topic must be approved by the thesis/dissertation advisory committee. Students whose research involves human subjects, animals, biohazards, or radiation must have their research proposals approved by the appropriate compliance committee before beginning their research.

Qualifying Examination

The Qualifying Examination is given to assess a doctoral student's competence in a broad range of relevant subject areas. Only students with unconditional admission status and in good academic standing may take the Qualifying Examination. A student may not register for dissertation credits before passing the Qualifying Examination. A student may be permitted to attempt the Qualifying Examination at most twice. A student who wants to retake the Qualifying Examination must apply to retake the Qualifying Examination by the posted deadline. A student not recommended for re-examination or who fails the exam on a second attempt will be dismissed from the doctoral program. While it is expected that the student takes the Qualifying Exam during his/her first year, he/she must take the exam before the end of three semesters or 27 attempted credit hours. A student who fails on the first attempt must retake the exam and pass it in the following semester, but no later than the end of the first four semesters or 36 attempted hours. The results of the qualifying exam will be communicated by the department to the Graduate College within 30 days from the date of the exam.

Each program will offer the qualifying examination at least once each semester (fall/spring) through a process administered by the graduate coordinator. The program handbook and website will clearly publish the exam format including subjects tested, number of questions from each subject, time allowed for each question and total exam duration, whether the exam is open book or closed book, written or oral, and passing score. Consequences of failing one or more parts of the exam will be clearly mentioned. All students taking the exam in the same academic year will receive the same exam format; therefore, any changes in the exam format will be published at least one year in advance.

Preliminary Examination

The Preliminary Examination is conducted by a doctoral student's dissertation committee and is an oral defense of the student's dissertation proposal. Only students with unconditional admission status, in good

academic standing, and a confirmed dissertation advisor may take the Preliminary Examination. A student may be permitted to attempt the Preliminary Examination at most twice. A student who wants to retake the Preliminary Examination must apply to retake the Preliminary Examination by the posted deadline. At least one full semester must elapse before the re-examination. A student not recommended for re-examination or who fails the exam on a second attempt will be dismissed from the doctoral program. A student who has not passed the Preliminary Exam by the time he/she has attempted 45 doctoral credit hours will be dismissed from the program. The results of the preliminary exam will be communicated by the department to the Graduate College within 30 days from the date of the exam.

Each program will offer the preliminary examination at least once each semester (fall/spring) through a process administered by the graduate coordinator. The program handbook and website will clearly publish the exam format including material tested, exam duration, whether the exam is open book or closed book, written or oral, and passing score. Consequences of failing one or more parts of the exam will be clearly mentioned. All students taking the exam in the same academic year will receive the same exam format; therefore, any changes in the exam format will be published at least one year in advance.

Admission to Candidacy

A doctoral student will be admitted to candidacy upon successful completion of the Qualifying Exam and the Preliminary Oral Exam.

Thesis/Dissertation Defense

The thesis/dissertation defense is conducted by the student's thesis/dissertation committee and is an oral defense of the student's final thesis/dissertation and is scheduled after the thesis/dissertation is completed. Copies of the thesis/dissertation must be presented by the student to his or her faculty advisor for review by the examining committee no later than one week prior to the defense of the thesis/dissertation. The examination may be held no earlier than one semester (or four months) after admission to candidacy. The results of the defense must be submitted by department to the Graduate College within 24 hours. Failure on the examination may result in dismissal from the program. The student's Advisory Committee may permit one re-examination. At least one full semester must elapse before the re-examination. Failure on the second attempt will result in dismissal from the program.

Submission of Thesis/Dissertation

After the thesis/dissertation has been successfully defended, the thesis/dissertation must be approved by each member of the student's thesis/dissertation committee. The student must submit the approved thesis/dissertation to the Graduate College by the deadline posted on the academic calendar, and must conform to the Graduate College's formatting guidelines for theses and dissertations. Prior to or at the time of submission, the student must complete and sign the Non-Exclusive Distribution Agreement granting North Carolina A&T State University a limited, nonexclusive, royalty-free, license to reproduce the thesis or dissertation in electronic form and make it available to the general public at no charge, subject to the embargo choice/publishing restrictions of the student. This form should be delivered to the Graduate College along with the original copy of the signature page bearing signatures of committee chair, department chair and/or dean of the school.

Thesis/Dissertation Advisor

All students in graduate programs must have a graduate advisor who is a member of the graduate faculty in the student's major program. In the case of doctoral programs and master's programs requiring theses and/or final oral examinations, the thesis/dissertation advisor is the chair or co-chair of the thesis/dissertation committee and serves as the graduate advisor. It is the student's responsibility to reach mutual agreement with a thesis/dissertation advisor and, in consultation with the advisor, to select a thesis/dissertation committee consisting of graduate faculty members.

Master's student: A student pursuing a master's thesis should reach agreement with a full member of the graduate faculty to serve as his/her thesis advisor by the time he/she has attempted 18 credit hours. The Graduate Coordinator or Department Chair approves and submits the advisor and committee names on the student's Plan of Study by the end of the second semester to the Graduate College for final approval. A student who is unable to reach agreement with any qualified faculty member to serve as his/her advisor by the time he/she has attempted 18 credit hours may be approved to graduate under a non-thesis option; this will require a revised Plan of Study and approval by the graduate coordinator/department chair and the Graduate College.

Doctoral student: A doctoral student should reach agreement with a full member of the graduate faculty to serve as his/her dissertation advisor by the time he/she has attempted 27 credit hours. The Graduate Coordinator or Department Chair approves and submits the advisor and committee names on the student's revised Plan of Study by the end of the third semester to the Graduate College for final approval. A student who is unable to reach agreement with any qualified faculty member to serve as his/her advisor by the time he/she has attempted 27 credit hours will be dismissed from the program. In this case, the student may submit a new application for admission to another program at North Carolina A&T State University or may transfer to another institution.

Advisory Committee Role

The primary function of the committee is to advise the student in all aspects of the educational program and to monitor and evaluate that student's progress toward the degree. The student is expected to meet with committee in formal sessions at appropriate intervals to critically assess the student's progress; such meetings may be requested by the student or by any member of the committee.

The advisory committee is responsible for the following aspects of the thesis or dissertation and the related or associated research experience:

- approval of the subject matter and methodology of the thesis or dissertation research;
- approval of the organization, content and format of the thesis or dissertation according to NCA&T guidelines;
- review of and comment on drafts of various sections of the thesis or dissertation, including (a) the quality of data and evidence, (b) logical reasoning, and (c) the editorial, linguistic and bibliographic quality;
- evaluation of the thesis or dissertation as a basis for certification that the student has fulfilled the requirements of the degree for which he or she is a candidate; and
- encouragement of and advice to the student and review of manuscripts based on the thesis or dissertation research for publication in the scholarly literature of his or her field.

Advisory Committee Composition

The advisory committee for a master's thesis is composed of at least three members of the Graduate Faculty, including the committee chair. At least two committee members must be Full or Associate members of the graduate faculty. The student's advisor serves as chair of the committee and is a Full member of the graduate faculty. The advisory committee for a doctoral dissertation is composed of at least four members of the Graduate Faculty. At least three committee members must be Full or Associate members of the graduate faculty. The student's advisor serves as chair of the committee and is a full member of the graduate faculty. The Advisory Committee is selected by the student in consultation with his/her advisor. The members of the committee must be approved by the graduate coordinator or department chair. The Graduate College verifies the eligibility of faculty to serve on advisory committees when the Plan of Study is submitted. The Graduate College will appoint an additional external committee member for all doctoral dissertation committees. The Graduate College faculty representative serves on the doctoral dissertation committee with all the rights and responsibilities of any other member. In

addition, the Graduate College faculty representative also represents the Graduate College to (i) protect the interest of the University by ensuring that the dissertation meets the highest academic standards, (ii) provide assurance that appropriate procedures are followed; and (iii) provide an 'outside' point of view by sharing expertise with a new perspective or theoretical vantage that might not otherwise be available.

Committee Members from Other Institutions

At most one of the required committee members may be selected from an external institution. If such a committee member is from another university, he/she must have graduate faculty status at his/her home institution; the program coordinator or department chair will provide evidence to the Graduate College before the appointment is approved. If the external committee member is from a non-academic organization, the appointment will be considered, and if appropriate, approved by the Graduate College after receiving a request and copy of the CV from the program coordinator or department chair. In all cases, it should be made clear to that person that he or she will be expected to participate in the comprehensive oral examinations.

Substitution of Committee Members

Under extenuating circumstances, it may be necessary for a member of a graduate advisory committee to have a substitute at committee meetings or the exam. The substitution of a committee member on an oral examination must be requested in writing by the program coordinator or department chair and approved by the Graduate College in advance of the examination.

Permanent Changes in Committee Members

- **Changes before Preliminary Examination.** Should the student, in consultation with his/her advisor, wish to change any of the committee members, he/she must submit a revised Plan of Study with the new members, indicating that this change has been approved by the advisor and by the graduate coordinator or department chair.
- **Changes after Preliminary Examination.** Changes in committee membership after the preliminary exam requires signatures of both outgoing and incoming committee members and the student, as well as justification for the committee change. Approval by the Graduate College is required before holding any examinations.
- Disagreements within the committee or between the student and a committee member over the quality of a student's performance are not grounds for reconstituting the committee.

Comprehensive Exams

Students enrolled in a graduate program may be tested by a comprehensive examination to determine the student's knowledge and skills in a general subject area or a concentration. The comprehensive examination date will be announced by the departmental graduate committee chairperson at the beginning of the semester. This examination will be administered to the enrolled student by an examining committee of the department.

- a. Eligibility to sit for the examination will be determined by the departmental graduate committee and the results of the examination will be forwarded to the Graduate College no later than 30 days prior to the end of the semester.
- b. Students may only take the comprehensive examination twice. After the second failure, the student will be dismissed from their academic program.

Graduate Courses, Credits and Curriculum

Semester Credit Hour

The unit of academic work is the semester credit hour defined as one 50-minute lecture period (or at least two periods of laboratory or field work) per week throughout one fifteen week semester. Summer sessions are shorter in duration; however, the contact hours each week are increased proportionately.

Online or blended courses will have the same learning outcomes as those delivered in traditional classroom instruction. Because learning in online and blended courses may not be quantified in terms of class meeting time, emphasis is placed upon evidence of student learning.

Degree program

A comprehensive course of study in a given disciplinary area identified by a unique CIP (Classification of Instructional Programs) code that leads to a master's or doctoral degree. The Registrar will maintain a unique major code for each degree program. Curriculum proposals for all graduate degree programs should be submitted to the Graduate Council, the Teacher Education Council (if teaching licensure option is included), and then to the Faculty Senate for approval. Students are formally admitted to a degree program. The name of the degree and the discipline appears on the student's plan of study, diploma and transcript.

Concentration

A graduate degree program may offer concentrations within the major field of study that reflect areas of specialization. A concentration within a degree program is defined by a coordinated set of courses representing a minimum of 18 credit hours. All concentrations within a degree program share a common core consisting of at least 9 credit hours. Furthermore, all concentrations require the same total credit hours for graduation. The Registrar will maintain a unique major code for each concentration within a degree program. Curriculum requests for all graduate degree concentrations should be submitted to the Graduate Council, the Teacher Education Council (if teaching licensure option is included), and then to the Faculty Senate for approval. Students are formally admitted to a concentration within a degree program. The name of the concentration appears on the student's plan of study and transcript, but not on the diploma.

Option

Options represent various pathways for a student to complete a degree program. All options will require the same total credit hours for graduation. Curriculum requests for all options within a graduate degree program should be submitted to the Graduate Council, the Teacher Education Council (if teaching licensure option is included), and then to the Faculty Senate for approval. A student is not admitted into an option. The option appears on the student's plan of study, but neither on the transcript nor the diploma.

Minimum credit hours for degree programs

The following minimum graduate credit hours are required for each type of graduate program. Individual programs may require a higher number of credit hours to fulfill disciplinary accreditation requirements.

- a. Masters programs: 30 credit hours beyond bachelor's degree including at least 6 credit hours of thesis research for thesis-option
- b. Doctoral programs: 60 credit hours beyond bachelor's degree including at least 12 credit hours of dissertation research.

Comprehensive Assessments

Graduate programs may require students to successfully complete a comprehensive assessment. The assessment may include a comprehensive examination (written and/or oral), a research project, thesis, dissertation, capstone course, portfolio, internship, field experience and/or equivalent. For details, students are referred to program/department handbooks.

Graduate Certificate Programs

A graduate certificate program in a non-degree program that requires at least 12 credits. A graduate certificate program may be Post-Baccalaureate (if admission is offered after completion of a bachelor's degree) or Post-Master's (if admission is offered after completion of a master's degree). The catalog

information should clearly indicate whether a certificate is a (i) stand-alone certificate, (ii) add-on certificate to a complementary degree program or (iii) a continuing education/professional development certificate. The Registrar will maintain a unique code for each certificate program. Curriculum requests for all PB (Post-Baccalaureate) and PM (Post-Master's) certificate programs should be submitted to the Graduate Council, the Teacher Education Council (if teaching licensure option is included), and then to the Faculty Senate for approval. The name of the certificate appears on the transcript. A student may be admitted independently to a stand-alone certificate program or to a continuing education/professional development certificate program. However, an add-on certificate can only be pursued after admission to a degree program.

Post-baccalaureate and post-masters certificate programs are designed to provide specialized graduate level training in a focused area. The minimal criteria are:

- All courses comprising the certificate program must be at a level acceptable for graduate credit, i.e. a course numbered at 600 or higher.
- The minimum number of semester credit hours required for a certificate may vary from program to program, but must consist of at least 12 semester credit hours.
- Courses required by the certificate program must be taught by members of the graduate faculty.
- Admission requirements of the School of Graduate Studies must be met by an applicant.
- A student may be admitted to the School of Graduate Studies for a certificate program without being admitted to a degree program. A student may subsequently apply for admission to a degree program for which the certificate credit hours constitutes some portion of total requirements, subject to the Graduate Transfer Credits policy.

Graduate Double Majors, Dual Degrees and Joint Degree Programs

Double Majors

A graduate student enrolled as a double major may earn two degrees at North Carolina A&T State University by enrolling concurrently in two separate but related programs of study, both at the master's level. Note that a master's degree student continuing on for a Ph.D. is not considered a double degree major.

Double degree programs must balance structural efficiency with individual program integrity. At least 18 credit hours must be unique to each program. Students in double degree programs will have to comply with the requirements of both degree programs as stated in the double degree agreement.

A student must apply to and be accepted by both programs before officially beginning the double degree program. In a practical sense, this means that a student should either be accepted by both programs at the same time or be accepted to the second program by the end of the second semester in the first degree program. Double degrees will not be awarded after the curricular requirements for both programs have already been met without initial application.

Double degree proposals must be approved by the proposing departments and schools/colleges. In addition to the sharing of courses, proposal materials should include: a description of the participating units/degrees, an overview of the existing academic course of studies, the rationale and demand for the new double major, guidelines for academic eligibility and meeting the School of Graduate Studies regulations, and any other supporting materials to assist with a thorough review of the request. A letter of support from the chair or director of each participating unit stating faculty support must also accompany the proposal.

Dual Degree Programs

Dual degree programs are those in which a student may enroll concurrently in two degree programs offered in two different academic units at two institutions, both at the master's level.

At least 18 credit hours must be unique to each program. Students in dual degree programs will have to comply with the requirements of both degree programs as stated in the dual degree agreement.

A student must apply to and be accepted by both programs before officially beginning the dual degree program. In a practical sense, this means that a student should either be accepted by both programs at the same time or be accepted to the second program by the end of the second semester in the first program. Dual degrees will not be awarded after the curricular requirements for both programs have already been met without initial application.

Dual degree proposals must be approved by the proposing departments and schools/colleges and their respective institutions. Dual degree programs are also subject to approval by SACS. In addition to the sharing of courses, proposal materials should include: a description of the participating units/degrees, an overview of the existing academic course of studies, the rationale and demand for the new dual degree, the structure and resource support for the new dual degree, guidelines for academic eligibility and meeting the School of Graduate Studies regulations, and any other supporting materials to assist with a thorough review of the request. A letter of support from the chair or director of each participating unit stating faculty support must also accompany the proposal.

Joint Degree Programs

Joint degree programs are those from which a single degree is awarded by two or more institutions participating in a joint degree program. A joint degree will carry the name of each participating institution on a student's diploma.

The development of a joint degree program must follow respective institutional processes for the approval of new degree programs at each participating institution before being submitted to the UNC Board of Governors for approval. Information regarding UNC System policies on joint degrees may be found at: <http://intranet.northcarolina.edu/docs/legal/policymanual/400.1.1.pdf>. Joint degree programs are also subject to approval by SACS.

Accelerated Bachelors Masters Program

The Accelerated Bachelor's/Master's (ABM) degree program allows an undergraduate student at North Carolina A&T State University an opportunity to complete the requirements for both the bachelor's and master's degrees at an accelerated pace. A student accepted into the ABM program will be permitted, as an undergraduate student, to take up to 12 credit hours of graduate courses that may also be used to satisfy requirements for his/her undergraduate degree. This will allow a student to complete a master's degree in the same field within approximately 18 months of completing the bachelor's degree.

Establishing an ABM Program

Prior to admission of any student into the ABM degree program, the program must be developed by the department/program and school/college and approved by the Graduate Council, the dean of the school/college offering the undergraduate program, the dean of the Graduate College, the Faculty Senate, and the Provost. The program may also require approval by SACS.

The same department or program that awards the bachelor's degree must sponsor the master's degree (ABM). This does not preclude a master's degree in interdisciplinary graduate programs in which the sponsoring department participates, nor acceptance of the student in a closely related field, if the department granting the graduate degree recommends admission to the Graduate College.

Acceptance into the ABM Program

A student accepted into the ABM program has approval to pursue the ABM degree option. Acceptance is not a guarantee of admission into the Graduate College. Acceptance into the ABM program is contingent on meeting the following eligibility requirements:

- a. A student must have completed between 75 and 90 credit hours in his/her undergraduate program, including credit hours earned from advanced placement.
- b. A transfer student must have completed a minimum of two semesters (24 credit hours) as a full-time A&T student in addition to the 75 to 90 earned hours as stated above.
- c. A student must have a minimum cumulative Grade Point Average (GPA) of 3.25 on a 4 point scale.

Application to the ABM Program

A prospective student who meets the eligibility requirements for the ABM program must set up a meeting with his/her undergraduate advisor and the graduate program coordinator to develop a Plan of Study for her/his bachelor's and master's degree programs. Before acceptance into an ABM program can be finalized, a student must submit:

- a. The standard application for admission to the Graduate College;
- b. A Plan of Study for the graduate degree that also indicates the graduation date for the master's degree. The Plan of Study must indicate the following: (i) a maximum of 12 graduate credit hours that will also count towards the undergraduate degree, (ii) a maximum of six (6) additional graduate credit hours that may be taken as an undergraduate student that will not be counted towards the bachelor's degree, (iii) courses that will be taken after matriculating into the graduate program, and (iv) the graduation date for the master's degree that meets the time limit for the ABM program (i.e. obtaining a thesis or non-thesis master's degree in the same field within 18 months of completing the bachelor's degree).
- c. Any changes to the ABM Plan of Study must be submitted in writing and approved by the chairperson and graduate program coordinator and by the dean of the Graduate College.

Requirements for Participation and Graduation

A student must complete the bachelor's degree prior to being admitted to the master's program. A student in the ABM may not elect to by-pass the bachelor's degree.

Continuing Eligibility

It is the responsibility of the student to recognize his/her eligibility status. To maintain continuing eligibility, a student must complete the bachelor's degree requirements with a GPA of at least 3.25 on a 4.0 scale, follow the plan of study, and meet other departmental requirements to continue to be eligible to participate in the program. If a student becomes ineligible to participate in the ABM degree program, the graduate program coordinator must inform the student in writing of his/her ineligibility. A copy of the letter to the student must be sent to the Graduate College.

Withdrawal

A student may, at any time, withdraw from the ABM program by informing her/his undergraduate advisor and graduate program coordinator in writing. A copy of this request to withdraw must be sent to the Graduate College for approval.

A student who either withdraws or loses eligibility to continue in the program will not be able to use any graduate courses towards the bachelor's degree. However, a maximum of six credit hours of graduate courses may be used towards another master's degree with the approval of the graduate program coordinator, department chair, and the dean of the Graduate College.

Master's Degree Enroute to Doctoral Degree

Graduate programs have the option of making their master's degrees available to students pursuing doctoral degrees in the same field without applying for admission to the master's programs provided the student continues to make satisfactory progress towards the doctoral degree.

A student admitted to a doctoral program may be awarded a master's degree in the same field as the doctoral program provided that all of the following conditions are satisfied:

- The student does not already have a master's degree in the same field.
- A Plan of Study for the doctoral program is approved by the student's advisor, department chair, and the Graduate School.
- The student makes normal academic progress toward the fulfillment of the doctoral degree requirements, consistent with the doctoral Plan of Study.
- A Plan of Study for the master's degree is submitted in the semester when the student expects to pass the doctoral preliminary exam and is approved by the student's advisor, the department chair, and the Graduate School. Only courses that are creditable towards the doctoral degree may be included in the master's Plan of Study.
- The student's advisor and department chair approves the awarding of the master's degree and the student submits an application to receive the master's degree.
- All Graduate School, academic School/College, and Department/Program requirements for the master's degree are satisfied.
- Unless previously approved by the Graduate School, the master's degree will be awarded after admission to candidacy.
- The maximum time limit for completion of the doctoral degree remains unchanged.

International doctoral students who are admitted to a PhD program and receive approval from the Graduate School to earn a master's degree enroute to the PhD must fulfill all requirements for the PhD in order to receive the master's degree. International students who decide to abandon the PhD program in favor of a master's degree program with the intention of applying for practical training in the field of the master's curriculum must apply for and be admitted to the new curriculum at the master's level at least one semester in advance of the intended change. International students must document the level change in writing from the Graduate School with the appropriate forms in order to be eligible for practical training in that field. Students in F-1 status who transfer to a new curriculum at the master's level must have a new Form I-20 issued prior to the transfer and should also understand that the PhD I-20 will remain as an "incompleted" program in the Student and Exchange Visitor Information System (SEVIS). The international doctoral graduate student must communicate his/her intentions to the Graduate Coordinator as well as to the Office of International Affairs and receive approval at least one full semester in advance of the change. Failure to do so could result in a violation of non-immigrant status and subsequent ineligibility for any type of employment.

Graduate Student Appeals

Students may appeal the following decisions made by the academic programs or by the Graduate College.

Grade appeals

The Graduate Appeals Committee considers grade appeals from graduate students. There are two grounds for appealing a grade: (1) evidence of miscalculation, and (2) material deviation from information published in the course syllabus without adequate notice of the change. The appeal should include three important aspects: (i) the action(s) being challenged, (ii) the person(s) against whom the complaint is being made—the “respondent,” and (iii) the redress being sought.

Before filing an appeal, a graduate student is expected to attempt to resolve the grading issue with the course professor and/or the department chairperson of the academic unit in which the grade was assigned. A graduate student who is unable to resolve issues with the course professor and/or department chairperson has thirty (30) calendar days from the date on which grades are due (as specified on the Registrar's academic calendar) for the relevant semester or summer session, or thirty (30) calendar days after the adverse decision at the department level to file an appeal with the dean of the Graduate College. If this date falls on a weekend or a university holiday, then the deadline will be the next workday. Students are responsible for submitting a written appeal with the required documentation to the dean of the Graduate College so that they are postmarked or hand-delivered by the deadline date. If a request for appeal is not postmarked or hand delivered by this deadline, it will not be considered.

Appealing dismissal from program

A written appeal must be submitted to the dean of the Graduate College within thirty (30) calendar days following the adverse recommendation or decision. The appeal should include three important aspects: (i) the action(s) being challenged, (ii) the person(s) against whom the complaint is being made—the “respondent,” and (iii) the redress being sought. A decision shall be deemed final on the expiration of the period for filing an appeal, or if an appeal is filed, upon issuance of a decision in such an appeal, whichever is later.

One representative of the Graduate College, together with one representative from Student Affairs, shall examine the appeal and jointly determine whether the actions complained about were disciplinary or academic. If the challenged action is deemed to be disciplinary, the dean of the Graduate College shall refer the complaint to the appropriate university officers responsible for disciplinary matters within five (5) business days. If the challenged action is deemed to be an academic matter, the dean of the Graduate College shall forward the appeal to the Graduate Appeals Committee.

Graduate Appeals Committee

The Graduate Appeals Committee will consist of two faculty members and a graduate student. One faculty member, from a college/school other than the one in which the student's academic department resides, will be appointed by the dean of the Graduate College. The other faculty member, from the college/school in which the student's program resides, will be appointed by the dean of the academic college/school. However, this representative will not be from the student appellant's department. In the event that either of the two aforementioned deans is a respondent against whom one or more allegations are pending in the appeal, the Provost will appoint the faculty member(s) for the affected dean. The Graduate Student Council will appoint a graduate student who is not a student in the appellant's college/school.

The Graduate Appeals Committee will review all written records of the case. As appropriate, it may afford the student appellant an opportunity to appear in person before it, and consider any written materials the student may wish to bring to its attention. The committee may also hear from the academic officer(s) whose action is being appealed and may confer with other involved parties. It shall evaluate any other information it deems important to its deliberations. The committee's report will be submitted to the dean of the Graduate College and the dean(s) of the appellant and the respondent(s). The dean of the Graduate College and the dean of the appellant's college/school shall jointly review the case, giving due consideration to the Graduate Appeals Committee's report and recommendation. The decision of the two deans will be final and do not set precedent; each case is considered on its own facts and merits.

In the event that one or both deans are respondents in the case, the Provost will appoint other dean(s) to officiate with respect to the appeal.

Graduate Faculty

The Graduate Faculty of North Carolina Agricultural and Technical State University exists as part of the total University Faculty. The primary function of the Graduate Faculty of NCA&T is to provide educational and research experiences which support high quality graduate education and to provide advice concerning policies associated with graduate programs at the University.

Terminal Degree

All faculty teaching graduate level courses must be members of the graduate faculty. Faculty members teaching courses at the master's and doctoral degree level are expected to hold the terminal degree in the discipline in which they are teaching or in a closely related discipline. In some cases, subject to prior approval by the SACS credentialing office, faculty members without a doctoral degree may teach graduate courses provided there is demonstrable evidence that such faculty member possess experience, knowledge, and capability in the discipline.

Appointment of Graduate Faculty

Each school/college will establish specific criteria that delineate what constitutes an adequate record of sustained academic and scholarly activity for appointment. On the basis of the approved criteria, the school/college will develop a process of systematic review and evaluation that will lead to appointment as graduate faculty. Updates to the roster of graduate faculty for each graduate program will be communicated to the dean of the Graduate College at the start of each academic year.

Primary Criteria for Graduate Faculty

- Evidence of regular and consistent creative or scholarly contributions that are widely disseminated in peer reviewed contexts in professionally recognized venues. Departments must define the expected level of scholarly contribution
- Supplemental appropriate professional activities including presentation at professional conferences, symposia and meetings, adjudication of scholarly and/or creative work for professional presentation, consulting, holding office in a professional society or organization germane to the discipline. Supplemental activities in lieu of documented record of scholarly and/or creative research will not qualify a faculty member for Full Graduate Faculty status.
- Actively involved in graduate education since last review. Department criteria must specify the minimum level of teaching activity necessary to maintain a regular appointment to Graduate Faculty, including demonstrated potential to direct masters or doctoral candidates successfully, number of students directed since the last review and their time-to-degrees, effective teaching of graduate courses appraised using class or peer evaluations, self-assessment by the faculty member, planning and directing of programs of graduate students and the direction of theses and dissertations, as well as serving on graduate student committees, and effectiveness and quality of mentoring. Initial appointments to the graduate faculty will not require this evidence of teaching performance, but evidence from previous institutions may be used in support of initial appointments if available.

Membership of the Graduate Faculty shall be divided into three categories: Full, Associate, and Affiliate Membership.

Full Members:

Eligibility: Tenured or tenure-track faculty members at the academic rank of assistant professor or higher are eligible for full membership status. In addition, full graduate faculty will meet the criteria for appointment established by the academic college faculty and will be appointed to full membership through a process determined by the academic college.

Responsibilities: Full Members of the Graduate Faculty may participate in all aspects of the graduate program including teaching graduate level courses in their area of expertise, serving on thesis/dissertation committees, and chairing master's thesis and doctoral dissertation committees. Additionally, only Full Members are eligible for election to the Graduate Council, to serve as a Graduate Coordinator, to represent the Graduate College on thesis and dissertation defenses, and to vote on issues presented to the Graduate Faculty pertaining to changes to the graduate program.

Associate Members

Eligibility: Tenured, tenure-track, and full-time non-tenure track faculty members and full-time EPA non-teaching employees are eligible for associate membership status. In addition, associate graduate faculty will meet the criteria for appointment established by the academic college faculty and will be appointed to associate membership through a process determined by the academic college.

Responsibilities: Associate Members of the Graduate Faculty may teach graduate courses, serve on thesis and dissertation committees, and co-chair master's thesis and doctoral dissertation committees provided a full graduate faculty member is the other co-chair.

Affiliate Members

Eligibility: Tenured and tenure-track, full-time or part-time non-tenure track faculty members, full-time or part time EPA non-teaching employees, visiting, retired, clinical, extension, practicum, research, teaching, and contractual employees are eligible for affiliate membership status. In addition, affiliate graduate faculty will meet the criteria for appointment established by the academic college faculty and will be appointed to teaching membership through a process determined by the academic college.

Responsibilities: Affiliate Members of the Graduate Faculty may teach graduate courses and may serve as the third member on a thesis committee and fourth member on dissertation committee.

Review and Continuation of Graduate Faculty

Each school/college will establish a process for continuation; change from Associate to Full member; or removal of membership on the Graduate Faculty. This process will be based on a variety of factors, including scholarly productivity, record of graduate teaching or mentorship, and/or other factors as defined by the school/college. The period of review will be defined by the school/college, but must occur at least once every five years.

A faculty member will automatically lose graduate faculty status at any time he/she is deemed deficient under post-tenure review.

Class Attendance

The University is committed to the principle that regular and punctual class attendance is essential to the students' optimum scholastic achievement. An absence, excused or unexcused, does not relieve the student of any course requirement. **Attendance is required and punctuality is expected!** A student is responsible for all the work, including tests and written work, of all class meetings.

Instructor's Responsibility

1. Attendance requirements should be stated in the course syllabus and announced in class, particularly at the beginning of each term. If class attendance is to affect a student's course grade, then a statement to that effect must be a part of the course syllabus distributed to each student.
2. Instructors will keep attendance records in all classes. Each instructor has the right to prescribe procedures as to how and when attendance will be taken.

Student's Responsibility

It is the responsibility of each student to learn and comply with the requirements set by the instructor for each class in which he or she is registered. The student should:

1. have knowledge of each instructor's attendance and monitoring practices for class absences during the term,
2. become familiar with all materials covered in each course during absences and makeup work of any work required by the instructor, and
3. Initiate the request to make-up work on the first day of class attendance after the absence.

Make-Up of Required Course Work

The administration, faculty and staff recognize that there are circumstances and events which require students to miss classes and any required course work which may be performed or due on the day of the absence. Also, they recognize that required course work is needed to give each student an adequate performance evaluation. Therefore, whenever reasonable (and more specifically described below), students should be allowed to make up required work.

The following definitions will apply with respect to this policy:

- a. Required course work – All work which will be used in the determination of final grades, e.g. examinations, announced quizzes, required papers and essays, required assignments.
- b. Instructor – Person responsible for the course and providing instruction and evaluation.
- c. Permissible reasons for requesting make up of required work – Sickness; death of relatives (immediate family); participation in approved University related activities; acting in the capacity of a representative of the University (band, choir, sports related travel, etc.); and extraordinary circumstances (court appearance, family emergency, etc.). NOTE: Other reasons for requesting make up of required course work are not acceptable.
- d. Documentation – Verification of sickness requires a signed statement of a physician or a duly authorized staff member of the Sebastian Health Center. Verification of death requires a signed statement from the Minister or Funeral Director. Verification of participation in University related activities requires a signed statement from the appropriate University official. Verification of other reasonable circumstances; for example, court appearance, family emergency, etc. requires a signed statement from an appropriate official (e.g., Court Official, parent or guardian, etc.).

The policy regarding make-up of required course work is as follows:

1. A student may petition an instructor to make up required course work whenever the student has a permissible reason for requesting make up of required course work.
2. A student will be required to present documentation which certifies absence constituting permissible reason.
3. Whenever possible, a student should consult with the instructor prior to an absence which will involve the failure to do required course work. Arrangements for make-up should be discussed and agreed upon at this time.
4. A student must petition for make-up of required course work on the first day that he or she returns to class.
5. If permission is granted to make up required course work, the instructor and the student should agree on an acceptable date for completion of missed required course work.
6. Failure to comply with item 4 may result in the denial to make up required course work.

Instructors should schedule make up work at a time that is convenient to both the instructor and the student.

Student Religious Observance

The General Assembly of North Carolina enacted G.S. 116-11(3a), a law mandating the establishment of excused absences for religious observance by students.

1. The University allows up to two (2) excused absences per academic term for religious observances required by the faith of a student.
2. Instructors have the authority to specify, by posting on their course syllabi, the requirements that students must follow in requesting an excused absence for religious observances. These requirements may include, but are not limited to, providing written notice to the instructor, the amount of lead time required prior to the religious observance, the nature of the religious observance and confirmation of the student's participation in writing by an official of the religious organization. All requests for absences for religious observances and the supporting documentation must be maintained by the student's academic college/school.
3. When appropriate notice is provided by a student, the student must be granted up to two (2) excused absences per academic term under this policy and must be allowed to satisfy missed assignments, tests/exams, or other course work disseminated during the period of absence, including requirements to complete anticipated tests/exams or assignments in advance of the originally scheduled date. Beyond the terms and limits of this policy, instructors maintain authority to establish and enforce the attendance policy in their respective courses. The requirement for students to make such requests for excused absences applies only to days when the University is holding class

Add and Drop Period

Adding Courses: Courses may be added during the first five (5) class days of a fall or spring semester. Courses may be added during the first two (2) class days of a summer session.

Dropping Courses: Courses may be dropped during the first five (5) class days of a fall or spring semester. Courses may be dropped during the first two (2) class days of a summer session.

Official student enrollment is represented by the number of hours in which a student is enrolled at the end of the fifth (5) day of classes in a fall or spring semester and at the end of the second (2) day of classes in a summer session. This date corresponds with the last day to drop courses and receive financial credit. Students wishing to drop all courses after this date must follow the University's withdrawal procedure.

All add/drop transactions must be completed by the official close of business on the last day to add/drop classes. If there are University-wide extenuating circumstances that prevent interaction with the web-based student information system, an extension of the add/drop deadline will be established

Withdrawal from an Individual Course

A student may withdraw from any course or courses by submitting a Change of Schedule form to the Office of the Registrar on or before the last day to withdraw from an individual course, as published in the Academic Calendar.

Students who withdraw from a course or courses on or before the last day to withdraw from an individual course are assigned a grade of "W." Failure to attend class does not constitute a withdrawal from that course or courses. Students are limited to a maximum of one (1) withdrawal per course, up to a maximum of sixteen (16) credit hours over the student's academic career. Upon a second attempt in a single course, the student is not permitted to withdraw from the course and must receive a grade for the course.

A student who does not officially withdraw from a course or courses will be assigned final grade in each course in which he or she was enrolled during the semester in question. Withdrawing from a course or courses may affect a student's financial aid status, will count toward the tuition surcharge threshold, and may affect the student's progress toward degree completion.

Students considering withdrawing from a courses or courses should consult their faculty advisor or academic unit advisor and the Office of Student Financial Aid.

Withdrawal from the University

Any student who is officially registered for classes and who wishes to withdraw from the University must complete the withdrawal process by the last day to withdraw from the university as published in the academic calendar.

Students who withdraw from the University prior to the published withdrawal deadline shall receive a "W" in all classes in which they were enrolled. Failure to attend classes does not constitute a withdrawal from the University. A student who does not officially withdraw from the University will be assigned the final grade earned in each course in which he or she was enrolled during the semester in question.

Withdrawal applications by students who have a pending judicial charge will not be processed by the Registrar. Pending judicial charges must be cleared before a student may officially withdraw from the University.

Withdrawal from the University may have significant academic and/or financial aid implications. Students are strongly encouraged to seek advisement by their academic advisor or academic unit and financial aid officer before completing the withdrawal process.

Retroactive Withdrawal from the University

A student who was unable to initiate the process for withdrawal from the University by the last day to withdraw as published in the academic calendar may request a retroactive withdrawal. Requests for a retroactive withdrawal shall be considered on a case-by-case basis, and shall be based on the following:

- serious illness or documented medical condition;
- death of an immediate family member;
- involuntary call to active military duty;
- documented change in conditions of employment;
- newly documented learning disability;
- other emergency circumstances, legal requirements, or extraordinary situations.

Written requests must be submitted prior to the end of the semester immediately following the semester for which the retroactive withdrawal is being requested. Before Sebastian Health Center or the Counseling Services approves a retroactive withdrawal, the health care provider shall consult (with the student's consent and without providing medical details) with the school/college dean in the student's field of study for the dean's input.

Except under extraordinary circumstances or to comply with legal requirements, for retroactive withdrawals subsequent to the effective date of this policy, students are limited to one (1) retroactive withdrawal during their academic career.

Cancellation of Course Registration

Under specific circumstances a student's course registration will be cancelled. The following are situations in which a student's course registration will be cancelled:

1. When the University cancels a course due to low enrollment or the unavailability of a qualified instructor,
2. When a student notifies the University, in writing, prior to the first day of classes that he/she will not be attending,
3. When a student fails to finalize payment of tuition and fees, after official notification to the student,
4. When a student is placed on academic suspension or on academic dismissal,
5. When a student is found to be ineligible to remain in the course due to not meeting the course prerequisite(s) or any course requirement(s),
6. When a student is found to be in violation of the Student Code of Conduct, prior to the first day of classes, and the Office of the Vice Chancellor for Student Affairs requests that the registration be cancelled.

Student Immunization Requirement

To protect the general health of the University community, the General Assembly of North Carolina enacted G.S. 130A-155.1, a law mandating that students submit proof of receiving required immunizations. Students who fail to submit proof of immunization, by the published deadline, will not be allowed to register for courses or they will have their course registration cancelled.

Payment of Tuition, Fees and other Dues

Students are officially enrolled at North Carolina A & T State University when all tuition, housing, meals and other applicable charges and fees have been paid in full. Students are responsible for full payment of tuition, fees and all other debts to the University by the published due date for the term. Failure to pay tuition, fees and all other debts will result in cancellation of the student's schedule/courses.

Students who add courses during the drop/add period, that result in additional tuition charges, are required to pay all charges and fees by the published due date. If the student fails to pay the additional charges, registration for the additional course(s) will be cancelled. Students who drop courses during the drop/add period, that result in a reduction in the tuition amount previously paid, will receive a refund if the transaction is made prior to the last day to drop and receive financial credit. It is the responsibility of the student to periodically check their student account for additional charges. It is also the student's responsibility to immediately respond to all bills and email notification of balances due the university.

Privacy of Student Records

The University ensures students access to their official academic records but prohibits the release of personally identifiable information, other than "directory information," from these records without their permission, except as specified by public law 93-380. "Directory information" includes: Student's name, address, E-mail address, telephone number, date and place of birth, school, major, dates of attendance, degree(s) received, honors received, institution(s) attended prior to admission to North Carolina Agricultural and Technical State University, past and present participation in officially recognized sports and activities, and physical factors. Public Law 93-380 further provides that any student may, upon written request, restrict the printing of such personal information relating to himself or herself as is usually included in campus directories. A student who desires to have "directory information" withheld must submit a written request to the Office of the Registrar prior to the end of the add/drop period for the semester in which he or she is enrolled.

Access to Student Records

1. The policy for the administration of student academic records is in accordance with the Family Educational Rights and Privacy Act of 1974 as amended.
2. Students have the right to inspect and review any and all official records, files, and data directly related to them.
3. A student who believes that his or her record contains inaccurate or misleading information shall have an opportunity for a hearing to challenge the content of the record, to assure that the record is not inaccurate, misleading, or otherwise in violation of his or her privacy or rights, and to provide an opportunity for the correction or deletion of any such inaccurate, misleading, or otherwise inappropriate data contained therein or include the student's own statement of explanation.
4. The University will comply with requests for records within a reasonable period of time and not later than (30) days after the request is received.
5. The release of academic records requires the written permission of the student, except as provided by Public Law 93-380. Transcripts are not issued to a student who has not met his or her financial obligations to the University.

Change of Name and Address

It is the obligation of every student to notify the Office of the Registrar of any change in name or address. Failure to do so can result in a delay in the handling of the student's records and in sending official University notifications to the student's home. To change a name a student must first have a legal court document.

Transcripts of Records

Students needing an official transcript should submit a completed Transcript Request Form to the Office of the Registrar at least one week before the official transcript is needed. Transcript requests are not processed for any student or alumnus with an obligation to the University such as unpaid fees, overdue loans, library books, audiovisual equipment, or whose admission records are not complete. The completed transcript request should contain the student's name (at the time they attended), student identification number, date of birth, the name and address of where the transcript is to be sent, and the student's signature. Unofficial transcripts may be obtained via Aggie Access On-Line (<https://horus.ncat.edu:9096>).

Academic Dishonesty Policy

North Carolina Agricultural and Technical State University is committed to a policy of academic honesty for all students. Examples of Academic Dishonesty include but are not limited to:

- Cheating or knowingly assisting another student in committing an act of academic dishonesty;
- Plagiarism (unauthorized use of another person's words or ideas as one's own) which includes but is not limited to submitting examinations, theses, reports, drawings, laboratory notes or other materials as one's own work when such work has been prepared by another person or copied from another person.
- Unauthorized possession of examinations or reserve library materials, destruction or hiding of source materials, library materials, or laboratory materials or experiments or any other similar action;
- Unauthorized changing of grades or marking on an examination or in an instructor's grade book, or such change of any grade record;
- Aiding or abetting in the infraction of any of the provisions anticipated under the general standards of student conduct; or
- Assisting another student in violating any of the above rules.

A student who has committed an act of academic dishonesty has failed to meet a basic requirement of satisfactory academic performance. Thus, academic dishonesty is not only a basis for disciplinary action

but may also affect the evaluation of the student's level of performance. Any student who commits an act of academic dishonesty is subject to disciplinary action as defined below.

In instances where a student has clearly been identified as having committed an academic act of dishonesty, the instructor may take appropriate punitive action including a loss of credit for an assignment, an examination or project, or award a grade of "F" for the course subject to the review and endorsement of the chairperson and the dean. Repeated offenses can even lead to dismissal from the University.

Student Appeal

A student who feels unfairly treated as a result of an academic dishonesty matter may appeal the action in writing to the University Judicial Tribunal. The written notice of appeal must be submitted within one week (seven calendar days) of the date of the incident. The student should refer to the section on Appellate Procedures in the Student Handbook.

Disruptive Behavior in the Classroom

(UNC-GA Policies for Students-Adopted by BOG October 26, 1970)

The instructor may withdraw a student from a course for behavior he deems to be disruptive to the class. The grade assigned will be "W" if the behavior occurs before the deadline for dropping a course without academic penalty, and the instructor has the option of giving a "W" or a "F" if the behavior occurs after the deadline.

Binding Procedures for Instructors

The instructor must provide an opportunity for the student to be heard. In providing this opportunity, the instructor must follow the procedure described below:

1. The student should be notified in writing at the next class attended that the instructor proposes to drop the student from the course for disruption of the class, and the instructor should provide the student with written instructions regarding the time and place for a meeting with the instructor. A copy of this written notification must be sent to the instructor's department head at the same time.
2. A time limit of five working days (M-F) from the time written notification is given for the student's opportunity to be heard by the instructor.
3. The date of notification establishes whether the withdrawn student will be given a "W" or "F." "W" is appropriate before the 8-week drop date and either "W" or "F" is appropriate after that date, at the instructor's discretion.
4. The instructor may suspend the student from class until the instructor takes final action to withdraw the student from class or to allow the student to continue in the class. The final decision to withdraw or continue the student is the instructor's.
5. Either party in the resolution of this dispute may invite one other person of the university community to be present as an observer.

Student's Right to Appeal

If the student wishes to appeal the instructor's decision to withdraw the student from class, he/she should follow the academic appeal procedures.

Cell Phone Policy

The use of cell phones inside the classroom during the classroom period is prohibited. Please be advised that placing or receiving calls as well as conversing on cell phones during the conduct of a class shall be considered as disruptive behavior for students and unprofessional behavior for faculty and staff.

Curriculum Requirements

Adult Education, MS

College of Education

Graduate Coordinator: Geleana Alston

Email: gdalston@ncat.edu

Phone: (336) 285-4385

Department Chair: Comfort Okpala

Email: cookpala@ncat.edu

Phone: (336)-285-4365

The Adult Education program is designed to prepare effective adult educators who will become change agents within local and international communities. Curricular experiences emphasize the historical, philosophical, and socio-cultural foundations of adult education with a special focus on the Black Diaspora. Graduates are prepared to work as community activists, agency supervisors/directors, program planners, program facilitators/planners, community leaders/organizers, directors of professional organizations, media organizers, and many other community roles. The Adult Education program follows the professional standards devised by the Commission of Professors of Adult Education.

Additional Admission Requirements:

- Professional portfolio
- Written sample

Program Outcomes:

- **Measurement and Evaluation:** Develop and apply standards for evaluating projects, programs and educational research.
- **Program Development:** Assess design, deliver, and evaluate adult education and training programs.
- **Application:** Apply adult learning and development theories to increase adult performance at the individual, group, and/or organizational levels.
- **Adult Program Processes:** Facilitate the understanding of adult education program processes- planning, organizing, leading, implementing, budgeting, and evaluating.
- **Communication:** Demonstrate effective written and oral communication skills.

Degree Requirements

Total credit hours: 30

- Core courses (12 credits): ADED 707, 708, 709, 716

Thesis option:

- Take 3 credits: ADED 794
- Take 9 credits from: ADED 600-799 with approval of advisor
- Thesis (ADED 797: 6 credits)
- Pass thesis defense

Non-Thesis Option:

- Take 15 credits from: ADED 600-799 with approval of advisor
- Practicum (ADED 784: 3 credits)
- Pass comprehensive exam

Agricultural and Environmental Systems - Agribusiness & Food Industry Management, MS

College of Agriculture & Environmental Science

Graduate Coordinator: Kenrett Jefferson-Moore **Email:** jykenret@ncat.edu **Phone:** 336-285-4829

Department Chair: Anthony Yeboah **Email:** yeboaha@ncat.edu **Phone:** 336-285-4827

The Master of Science in Agricultural and Environmental Systems - Agribusiness and Food Industry Management focuses on business applications that support the food and fiber industry. The overall mission of the program is to prepare students for successful post-baccalaureate work by developing and maintaining a program in partnership with industry that is the focal point of state agribusiness which includes the food, fiber and animal sub-sectors in North Carolina as well as the United States.

Program Outcomes:

- The program will give students the skill set, including analytic and communication (both written and oral), to manage an agribusiness enterprise.
- The program will give the students the decision-making skills, including decision-making under risk and uncertainty.
- The program will give students the ability to understand applied economics, including transaction costs analysis and game theory.
- The program will give students the ability to understand the functions of management, including business strategy, marketing, finance, operations/logistics, and human resource management.
- The program will give students an appreciation for contemporary issues facing food and agribusiness managers.
- The program will enhance students' ability to be comfortable with networking (i.e. building social capital).

Degree Requirements

Total credit hours: 30

- Core courses (9 credit hours): AGRI 604/ABM 705, AGRI 700, 780

Thesis option

- Select 15 credit hours from ABM courses with approval of advisor
- Thesis (ABM 797: 6 credits)
- Pass thesis defense

Project option

- Select 18 credit hours from ABM courses with approval of advisor
- Project (ABM 796: 3 credits)

Agricultural and Environmental Systems - Integrated Animal Health Systems, MS

College of Agriculture & Environmental Science

Graduate Coordinator: Mulumebet Worku **Email:** worku@ncat.edu **Phone:** 336-285-4816

Department Chair: Ralph Noble **Email:** rcnoble@ncat.edu **Phone:** 336-285-4776

The Master of Science in Agricultural and Environmental Systems - Integrated Animal Health Sciences is designed to provide a solid foundation of fundamental biological and biochemical principles within the areas of biotechnology, breeding and genetics, microbiology, nutrition, physiology and toxicology. Thesis research or a project is conducted in the laboratories of faculty research advisors in the areas of biotechnology, immunology, microbiology, nutrition and physiology in poultry and livestock production (swine, goat, sheep, dairy and beef cattle) for sustainable agricultural and environmental systems.

Additional Admission Requirements

- Baccalaureate degree in animal science, agriculture or other related STEM area. Unconditional admission requires an undergraduate degree in animal sciences or a closely related discipline that includes work with lab or farm animals

Program Outcomes:

- To develop abilities to assess and conduct valid scientific research and practices that will facilitate sustainable food production
- To develop understanding of agricultural and environmental systems and interdisciplinary approaches for improved animal health, management and well being

Degree Requirements

- Core courses (9 credit hours): AGRI 604/ABM 705, AGRI 700, 780

Thesis option

- Select 15 credit hours from ANSC courses with approval of advisor
- Thesis (ANSC 797: 6 credits)
- Pass thesis defense

Project option

- Select 15 credit hours from ANSC courses with approval of advisor
- Select 3 credit hours from any discipline with approval of advisor
- Project (ANSC 796: 3 credits)

Agricultural and Environmental Systems - Natural Resources and Environmental Systems, MS

College of Agriculture & Environmental Science

Graduate Coordinator: Louis Jackai

Email: lejackai@ncat.edu

Phone: 336- 285- 4837

Department Chair: Abolghasem Shahbazi

Email: ash@ncat.edu

Phone: 336- 285- 4851

The Master of Science in Agricultural and Environmental Systems – Natural Resources and Environmental Systems prepares students for career opportunities and research in the natural environmental and natural resources.

Additional Admission Requirements

- Academic preparation in basic sciences

Program Outcomes:

- The production of advanced agricultural scholars that obtain professional and leadership roles with agricultural and environmental related entities
- 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

- Core courses (9 credit hours): AGRI 604/ABM 705, AGRI 700, 780

Thesis option

- Select 15 credit hours from: NARS; AGRI; HORT; SLSC; EASC with approval of advisor
- Thesis (NARS 797: 6 credits)
- Pass thesis defense

Project option

- Select 18 credit hours from: NARS; AGRI; HORT; SLSC; EASC with approval of advisor
- Project (NARS 796: 3 credits)

Agricultural Education – Professional Licensure, MS

College of Agriculture & Environmental Science

Graduate Coordinator: Chastity Warren

Email: ckwarren@ncat.edu

Phone: 336-285-4819

Department Chair: Anthony Yeboah

Email: yeboaha@ncat.edu

Phone: 336-334-7943

The Master of Science in Agricultural Education prepares students for successful careers and a lifetime of informed choices in the global agriculture, food, fiber, and natural resources systems. Agricultural Education at North Carolina A&T is offered completely online and on campus. The Professional Licensure concentration prepares individuals to teach agriscience education in middle and high schools. Graduates of this track are eligible to apply for advanced (graduate level) licensure in North Carolina. This track offers graduates versatility in career options, because it also prepares them for the many other professions that rely on agricultural educators. The Agricultural Education program is accredited by the National Council for Accreditation of Teacher Education (NCATE) and the North Carolina Department of Public Instruction to offer advanced licensure training in Agricultural Education.

Teacher Education Licensure: Completing this master's degree and obtaining a teaching license are separate processes. Admission to this master's program does not guarantee admission to the Teacher Education Licensure program. To be recommended for licensure, candidates must first be formally admitted to the Teacher Education Licensure Program. Failure to complete the Teacher Education admission requirements during the first semester of enrollment may result in the student's inability to register for certain required courses. Applicants and current students should review licensure requirements at <http://www.ncat.edu/academics/schools-colleges1/soe/teacher-education/index.html> or visit the School of Education for guidance on specific requirements.

Additional Admission Requirements

- Basic preparation in an agricultural related discipline or other broadly related areas.
- The Professional Licensure track is designed for individuals who are currently teaching secondary agricultural education, holders of the "A" License for secondary agricultural education in the State of North Carolina, are provisionally licensed for agricultural education, or are seeking licensure through the graduate program.

Program Outcomes:

Upon completion of the graduate program in Agricultural Education:

- Students will critically analyze issues impacting the food, agricultural, and environmental science.
- Students will demonstrate the ability to effectively communicate knowledge and issues impacting the food, agricultural, and environmental science disciplines.
- Students will develop and implement effective program planning and evaluation plans for their agricultural education programs to facilitate improvement of agricultural education programs.
- Demonstrate a deeper appreciation and knowledge of the agricultural education discipline.
- Students will be able to implement and use a variety of instructional methodologies and technologies.
- Students will be prepared to teach a diverse population about subject matter related to food, agricultural, and environmental sciences.

Degree Requirements

Total credit hours: 30

- Core courses (12 credit hours): AGED 703, 704, 710, 711

Thesis option

- Take AGED 752
- Select 9 credits from School of Agriculture or Curriculum and Instruction

- Thesis (AGER 797: 6 credits)
- Pass thesis defense

Project option

- Take AGED 752
- Select 12 credits from School of Agriculture or Curriculum and Instruction
- Project (AGED 796: 3 credits)

Agricultural Education – Professional Service, MS

College of Agriculture & Environmental Science

Graduate Coordinator: Chastity Warren

Email: ckwarren@ncat.edu

Phone: 336-285-4819

Department Chair: Anthony Yeboah

Email: yeboaha@ncat.edu

Phone: 336-334-7943

The Master of Science in Agricultural Education prepares students for successful careers and a lifetime of informed choices in the global agriculture, food, fiber, and natural resources systems. Agricultural Education at North Carolina A&T is offered completely online and on campus. The Professional Service concentration prepares individuals for careers in agribusiness, government, or legal professions. Students interested in international study can participate in the Peace Corps International. Students in both study tracks are also prepared for doctoral degree programs and other professional schools. Graduates of the program find employment in secondary education, agribusiness industry, federal and state government, cooperative extension, higher education, rural and international development, and nonprofits. Some prominent employers include the United States Department of Agriculture, John Deere, Kraft, Cargill, and the North Carolina Public School System. Many graduates go on to pursue doctoral work at prestigious research universities such as Iowa State, The Ohio State, Purdue, Penn State, and Virginia Tech.

Additional Admission Requirements

- Basic preparation in an agricultural related discipline or other broadly related areas.

Program Outcomes:

Upon completion of the graduate program in Agricultural Education:

- Students will critically analyze issues impacting the food, agricultural, and environmental science.
- Students will demonstrate the ability to effectively communicate knowledge and issues impacting the food, agricultural, and environmental science disciplines.
- Students will develop and implement effective program planning and evaluation plans for their agricultural education programs to facilitate improvement of agricultural education programs.
- Demonstrate a deeper appreciation and knowledge of the agricultural education discipline.
- Students will be able to implement and use a variety of instructional methodologies and technologies.
- Students will be prepared to teach a diverse population about subject matter related to food, agricultural, and environmental sciences.

Degree Requirements

Total credit hours: 30

- Core courses (12 credit hours): AGED 703, 704, 710, 711

Thesis option

- Take AGED 712
- Select 9 credits from School of Agriculture or Curriculum and Instruction
- Thesis (AGER 797: 6 credits)
- Pass thesis defense

Project option

- Take AGED 712
- Select 12 credits from School of Agriculture or Curriculum and Instruction
- Project (AGED 796: 3 credits)

Applied Mathematics, MS

College of Arts and Sciences

Graduate Coordinator: Alexandra Kurepa

Email: kurepa@ncat.edu Phone: 336-285-2079

Department Chair: Guoqing Tang

Email: tang@ncat.edu Phone: 336-285-2033

The Applied Mathematics program provides a thorough background and research training in one of the key areas of Applied Mathematics, such as Mathematical Modeling and Analysis, Dynamics Systems and Differential Equations, Numerical Analysis and Fluid Dynamics, Probability and Statistics, Control Theory and Optimizations. The program also gives the students hands-on experience in current important applications in these areas, along with the statistical and computational skills to apply their knowledge to real world applications.

Additional Admission Requirements

A Bachelor's degree in Mathematics or a closed related field from an accredited institution

Program Outcomes:

- Students will develop research expertise in one of the areas of Applied Mathematics.
- Students will proficiently apply mathematical knowledge, technology skills, and logical reasoning and proof skills, in solving problems or developing new techniques in Applied Mathematics.
- Students will communicate effectively and with confidence using accurate symbolic representation and correct mathematical terminology orally, in writing, and when using technology according to the standards of the field of mathematics.
- Students will develop the ability to use mathematical reasoning and analysis to acquire a comprehensive understanding of Applied Mathematics. Students will be able to apply analytical reasoning skills in decision making as well as mathematics based problem solving skills in an interdisciplinary context.
- Students will demonstrate computational skills and knowledge of current technology, software and hardware used in Applied Mathematics.

Degree Requirements

Total credit hours: 30

- Core courses (9 credit hours): MATH 603, 651, and 690

Thesis option:

- Take 9 credit hours of 700 level MATH courses with approval of advisor
- Take 6 credit hours of graduate electives with approval of advisor
- Master's Thesis (MATH 797: 6 credit hours)
- Pass Master's Comprehensive Exam
- Pass thesis defense

Project Option:

- Take 9 credit hours of 700 level MATH courses with approval of advisor
- Take 9 credit hours of graduate electives with at least 3 credit hours at 700 level and approval of advisor
- Graduate Design Project (MATH 796: 3 credit hours)
- Pass Master's Comprehensive Exam
- Pass Graduate Design Project oral examination

Bioengineering, MS

College of Engineering

Graduate Coordinator: Yecheung Yun

Email: yyun@ncat.edu

Phone: 336-285-3226

Department Chair: Stephen B. Knisley

Email: sbknisle@ncat.edu

Phone: 336-334-7564

The Master of Science in Bioengineering program prepares graduates for Ph.D. level studies or for advanced bioengineering practice in industry, consulting, or government service. The program emphasizes advanced research and education in the application of engineering principles, methods, and technologies to problems in health care. The Bio Engineering Masters students and faculty conduct research in a variety of medical and life science areas such as biosystems analysis, implantable medical devices, artificial organs, tissue engineering, biomaterials, biomechanics, biosignals and biosensors.

Additional Admission Requirements

- Unconditional admission requires undergraduate degree from an ABET accredited Engineering program

Program Outcomes:

- The graduates will perform effectively in an advanced bioengineering (biomedical) related position in industry or in advance graduate/professional schools.
- The graduates will demonstrate research leadership skills in using interdisciplinary and advance approaches or techniques for solving their research or project problems in the bioengineering field.
- The graduates will be active in leadership positions of the professional societies.
- The graduates will enhance their professional credentials through conference presentations, publications and understanding the importance of lifelong learning.
- Be prepared to join the workforce and contribute to economic development.

Degree Requirements

Total credit hours: 30

- Core courses (9 credits): BMEN 711, 712, 713

Thesis option:

- Engineering electives: Take 9 credits from BMEN; CHEN; CIEN; ECEN; ISEN; MEEN; NANO; CSE; COMP with approval of advisor
- Life Sciences electives: Select 6 credit hours from BIOL; ANSC with approval of advisor
- Participate in BMEN Seminar
- Thesis (BMEN 797: 6 credits)
- Pass thesis defense

Project Option:

- Engineering electives: Take 12 credits from BMEN; CHEN; CIEN; ECEN; INEN; MEEN; NANO; CSE; COMP with approval of advisor
- Life Sciences electives: Select 6 credit hours from BIOL; ANSC with approval of advisor
- Participate in BMEN Seminar
- Project (BMEN 796: 3 credits)

Course Option:

- Engineering electives: Take 15 credits from BMEN; CHEN; CIEN; ECEN; INEN; MEEN; NANO; CSE; COMP with approval of advisor
- Life Sciences electives: Select 6 credit hours from BIOL; ANSC with approval of advisor
- Participate in BMEN Seminar

Biology, MS

College of Arts & Sciences

Graduate Coordinator: Patrick Martin

Email: pmmartin@ncat.edu

Phone: 336-285-2168

Department Chair: Mary A. Smith

Email: smithma@ncat.edu

Phone: 336-285-2160

The primary objective of the Masters of Science program in Biology is to prepare students to enter and complete doctoral and health professional programs in order to become productive teachers, researchers, and health professionals. To support this objective, this program will develop in all participants, through research experiences and other enrichment activities, independent thinking, creativity, critical judgment, and personal integrity. Specifically, this program is designed to enhance the student's ability to design experiments, to analyze results, to become competent using state-of-the-art research equipment, enhance manipulative skills, and to improve the student's proficiency in oral and written communication. Students will have opportunity to conduct research in various areas, including cancer research, diabetes research, molecular genetics, microbiology/immunology, genomics/bioinformatics, physiology, evolution, toxicology, and health disparities research. An additional critical objective is to enable students to score at or above the 50th percentile on the GRE Subject Test in Biology after their first year in residency.

Additional Admission Requirements

- A Bachelor's Degree in Biology or a related discipline from an accredited institution.
- Chemistry through Organic II
- One year of Calculus, One year of Physics and Cellular and Molecular Biology

Program Outcomes

- SLO 1: Knowledge of the Biological Discipline. During the course of study in the Master of Science Degree Program in Biology, students integrate biological concepts from a variety of sub-disciplines on the required comprehensive examination prepared by instructors of courses that students have taken in the first year.
- SLO 2: Communication. During the course of study in the Master of Science Degree Program in Biology, students will present research findings in standard formats used by biological scientists and the guidelines of the NC A&T Graduate College.
- SLO 3: Critical Thinking (Masters Level). During the course of study in the Master of Science Degree Program in Biology, students will conduct critical reviews of scientific papers according to guidelines of the instructor.
- SLO 4: Scientific Research. During the course of study in the Master of Science Degree Program in Biology, students will implement an original research project based on the standard guidelines for biological research and a proposal approved by a faculty research advisor and committee.

Degree Requirements

Total credit hours: 30

- Core courses (9 credits): BIOL 749, 761; CHEM 651

Thesis option:

- Take 3 credit hours: BIOL 703
- Electives: Select 4 credit hours from BIOL, ANSC, CSE or other with approval of graduate program coordinator
- Seminar (2 credit hours): BIOL 789, 792
- Supervised Research (BIOL 794: 6 credits)
- Thesis (BIOL 797: 6 credit hours)
- Pass thesis defense
- Pass comprehensive exam

Project Option:

- Take 3 credit hours: BIOL 703
- Electives: Select 10 credit hours from BIOL, ANSC, CSE or other with approval of graduate program coordinator
- Seminar (2 credit hours): BIOL 789, 792
- Project (BIOL 796: 6 credit hours)
- Pass comprehensive exam

Biology – Industrial Biosciences PSM, MS

College of Arts & Sciences

Graduate Coordinator: Patrick Martin

Email: pmmartin@ncat.edu

Phone: 336-285-2160

Department Chair: Mary A. Smith

Email: smithma@ncat.edu

Phone: 336-285-2160

The primary objective of the Professional Science Master's concentration in Industrial Biosciences is to provide students with advanced technical skills, industry-guided knowledge, and business training to prepare them for work in the commercial sector. To support this objective, this program will develop in all participants, through training experiences and other enrichment activities, scientific understanding, understanding of the commercialization process, critical judgment, and personal integrity. Specifically, this program is designed to enhance the student's ability to manage scientific projects, to understand regulatory, ethical and legal dimensions of science-based work, to become competent using state-of-the-art research equipment, and to improve the student's proficiency in oral and written communication. Students will have opportunity to pursue training in various project areas, including genetics, microbiology, biotechnology, bioinformatics, physiology, evolution, toxicology, and health disparities research.

Additional Admission Requirements

- A Bachelor's Degree in Biology or a related discipline from an accredited institution.
- Chemistry through Organic II
- One year of Calculus, One year of Physics and Cellular and Molecular Biology

Program Outcomes

- **Communication skills:** Students completing the MS degree program in Biology will exhibit effective communication skills (written, oral, graphic and interpersonal) appropriate for professionals in this field of study at the master's or doctoral level
- **Critical Thinking skills:** Students completing the MS degree program in Biology will effectively use quantitative and/or qualitative analytical problem-solving skills appropriate for professionals in this field of study at the master's or doctoral level
- **Disciplinary Expertise:** Students completing the MS degree program in Biology will demonstrate a level of discipline-specific expertise (knowledge, skills, and professionalism) appropriate for professionals in this field of study at the master's or doctoral level
- **Research/Creative Engagement:** Students completing the MS degree program in Biology will demonstrate ability to engage productively in the review and conduct of disciplinary research and creative professional activity appropriate for professionals in this field of study at the master's or doctoral level

Degree Requirements

Total credit hours: 30

- **Core courses (9 credits):** BIOL 749, 761; CHEM 651
- **Disciplinary Electives:** Select 6 credit hours from BIOL with approval of PSM coordinator
- **Business/Management Electives:** Select 6 credit hours from graduate courses in business and economics with approval of advisor
- **Ethics Electives:** Select 3 credit hours from: MKTG 636; WMI 617, or other course with approval of advisor
- **Experiential component:** Project (BIOL 796: 6 credit hours)

Business Administration - Accounting, MBA

College of Business and Economics

Graduate Coordinator: Eric Gladney

Email: emgladne@ncat.edu

Phone: 336-285-3774

Department Chair: Kevin James

Email: kljames@ncat.edu

Phone: 336-334-7581

The Master of Business Administration program with a concentration in Accounting prepares students for professional careers in accounting and management positions in the public or private sectors. This high quality program will provide accounting graduates from A&T and other institutions the opportunity to enhance their marketability through professional certification. This program has been designed to be competitive with graduate accounting programs at peer and competitive institutions. The MBA program is accredited by the AACSB International - The Association to Advance Collegiate Schools of Business International. This is the premier accrediting agency for undergraduate and graduate schools of business, economics, and accountancy

Additional Admission Requirements

- GMAT or GRE exam score if undergraduate GPA is less than 3.30
- A current resume
- Students without undergraduate business related degrees will be required to take up to 12 additional credits of foundation courses in accounting and finance (ACCT 608), economics, (ECON 606), business analysis (MGMT 605), and enterprise management (MGMT 612)

Learning Objectives:

- Students will gain enhanced knowledge of financial accounting processes needed for professional practice and successful completion of professional certification exams.
- Students will understand the application of accounting principles and practices in a global environment.

Degree Requirements

Total credit hours: 36

- Core courses (24 credits): ACCT 710; ECON 708; FIN 750; MGMT 720, 725, 727, 750; MKTG 716
- Take 12 credits: ACCT 643, 689, 761, 763

Business Administration - Human Resources Management, MBA

College of Business and Economics

Graduate Coordinator: Eric Gladney

Email: emgladne@ncat.edu

Phone: 336-285-3774

Department Chair: Silvanus J. Udoka

Email: udoka@ncat.edu

Phone: 336-256-2273

The Department of Management offers a program of study leading to the Master of Business Administration degree with a major concentration in Human Resources Management (HRM). The program prepares students and professionals for careers in public and private sector positions in the Human Resources Management function of organizations and managers interested in understanding how to effectively develop and manage human resources. The MBA program is accredited by the AACSB International - The Association to Advance Collegiate Schools of Business International. This is the premier accrediting agency for undergraduate and graduate schools of business, economics, and accountancy. In addition the Human Resources Management concentration is one of few graduate HRM programs certified by the Society of Human Resources Management (SHRM).

Additional Admission Requirements

- GMAT or GRE exam score if undergraduate GPA is less than 3.30
- A current resume
- Students without undergraduate business related degrees will be required to take up to 12 additional credits of foundation courses in accounting and finance (ACCT 608), economics, (ECON 606), business analysis (MGMT 605), and enterprise management (MGMT 612)

Learning Objectives:

- Students will understand the concepts and applications of the HRM function, and its contribution to firm performance.
- Students will comprehend the strategic importance of the HRM function as a competitive advantage.
- Students will be able to plan, manage, and revise a HRM function in a professional domestic or global setting, while demonstrating the appropriate responses to ethical, social, and multicultural issues.

Degree Requirements

Total credit hours: 36

- Core courses (24 credits): ACCT 710; ECON 708; FIN 750; MGMT 720, 725, 727, 750; MKTG 716
- Take 12 credits: MGMT 731, 733, 735, 736

Business Administration - Supply Chain Systems, MBA

College of Business and Economics

Graduate Coordinator: Eric Gladney

Email: emgladne@ncat.edu **Phone:** 336-285-3774

Department Chair: Joseph Huscroft

Email: jrhuscroftjr@ncat.edu **Phone:** 336-334-7632

The Department of Marketing, Transportation and Supply Chain offers a program of study leading to the Master of Business Administration degree with a major concentration in Supply Chain Systems. The concentration prepares students and professionals for careers in supply chain management. A required business core of study in marketing, accounting and finance, management, information systems, economics and quantitative analysis is blended with business-relevant supply chain management courses and applications. The supply chain management topics covered are purchasing and supply management; global, demand-driven supply chain design and management; and supply chain systems with SAP/ERP. The MBA program is accredited by the AACSB International - The Association to Advance Collegiate Schools of Business International. This is the premier accrediting agency for undergraduate and graduate schools of business, economics, and accountancy.

Additional Admission Requirements

- GMAT or GRE exam score if undergraduate GPA is less than 3.30
- A current resume
- Students without undergraduate business related degrees will be required to take up to 12 additional credits of foundation courses in accounting and finance (ACCT 608), economics, (ECON 606), business analysis (MGMT 605), and enterprise management (MGMT 612)

Learning Objectives:

- Students will be able to evaluate the strategic importance of an acquisition process that aligns the supplier network with organizational goals and strategies.
- Students will be able to apply the principles of cost, demand, and supply chain design to effectively manage the information, product, and financial flows through the supply chain to develop value-creating networks
- Students will be able to apply enterprise resource planning to the function of supply chain management

Degree Requirements

Total credit hours: 36

- Core courses (24 credits): ACCT 710; ECON 708; FIN 750; MGMT 720, 725, 727, 750; MKTG 716
- Take 12 credits: TSCM 701, 720, 725, 727

Chemical Engineering, MS

College of Engineering

Graduate Coordinator: Vinayak Kabadi

Email: kabadi@ncat.edu

Phone: 336-334-7564

Department Chair: Stephen Knisley

Email: sbknisle@ncat.edu

Phone: 336-285-2653

The graduate Chemical Engineering program prepares students for further study at the doctoral level or for advanced chemical engineering practice in industry. Graduates of the program work in a broad range of fields and create innovative solutions to important industrial and societal problems. Active areas of research include Thermodynamics and Molecular Computation, Catalysis and Reaction Engineering, Transport Processes, Polymers, Energy and Fuels, Environmental Chemical Engineering and Biological Engineering.

Additional Admission Requirements

- Undergraduate degree in STEM discipline
- Unconditional admission requires an engineering undergraduate degree from an ABET accredited Chemical Engineering program

Program Outcomes:

- The graduates will perform effectively in an advanced chemical engineering related position in industry or in advanced graduate/professional schools.
- The graduates will demonstrate research leadership skills in using interdisciplinary and advanced approaches or techniques for solving their research or project problems.
- The graduates will be active in professional societies.
- The graduates will enhance their professional credentials through lifelong learning.

Degree Requirements

Total credit hours: 30

- Core courses (9 credits): CHEN 720, 750, 760

Thesis option

- CHEN elective (3 credits): Select 3 credits from CHEN 705, 710, 715
- CHEN electives (6 credits): Select 6 credits from CHEN 600-799
- Engineering electives (6 credits): Select 6 credit hours from CHEN, BMEN, ELEN, ISEN, MEEN, PHYS, CHEM, BIOL, MATH, NANO, EES with approval of advisor
- Participate in CHEN seminar
- Thesis (CHEN 797: 6 credits)
- Pass thesis defense

Project option

- CHEN elective (3 credits): Select 3 credits from CHEN 705, 710, 715
- CHEN electives (6 credits): Select 6 credits from CHEN 600-799
- Engineering electives (9 credits): Select 9 credit hours from CHEN, BMEN, ELEN, ISEN, MEEN, PHYS, CHEM, BIOL, MATH, NANO, EES with approval of advisor.
- Project (CHEN 796: 3 credits)
- Participate in CHEN seminar

Course option

- CHEN elective (3 credits): Select 3 credits from CHEN 705, 710, 715
- CHEN electives (9 credits): Select 9 credits from CHEN 600-799
- Engineering electives (9 credits): Select 9 credit hours from CHEN, BMEN, ELEN, ISEN, MEEN, PHYS, CHEM, BIOL, MATH, NANO, EES with approval of advisor.
- Participate in CHEN seminar

Chemistry, MS

College of Arts and Sciences

Graduate Coordinator: Marion Franks

Email: mafranks@ncat.edu

Phone: 336-285-2230

Department Chair: Zerihun Assefa

Email: zassefa@ncat.edu

Phone: 336-285-2255

The mission of the MS in Chemistry program at North Carolina Agricultural and Technical State is to provide the theoretical and experimental training for post-baccalaureate students leading to Masters level degrees in chemistry and teaching. The graduate degree program prepares students to pursue advanced professional and doctoral degrees. In addition, courses are offered that may be used for renewal of teacher certificates.

Additional Admission Requirements

- An undergraduate major in chemistry that includes one year of physical chemistry and one year of differential and integral calculus.
- Undergraduate coursework in all of the major areas of Chemistry including physical analytical, organic and inorganic chemistry.
- Two of the three letters of recommendation should be from former science or math professors.

Program Outcomes:

- **Communication:** M.S. candidates will demonstrate the ability to comprehend, apply and evaluate information from chemistry literature which is to be orally presented and validated in a seminar.
- **Chemical Knowledge:** M.S. candidates will demonstrate chemistry proficiency in all four sub-disciplines of chemistry: analytical, inorganic, organic, and physical.
- **Research Training:** M.S. candidates will acquire the basic tools needed to carry out independent chemical research. Students should become proficient in their specialized area of chemistry and successfully complete a written graduate level research project or thesis.

Degree Requirements

Total credit hours: 30

- Core courses (12 credits): CHEM 711, 722, 732, 743

Thesis option:

- Seminar (CHEM 792: 1 credit)
- Take 8 credits of additional CHEM courses with approval of advisor
- Supervised Research (CHEM 794: 3 credits)
- Thesis (CHEM797: 6 credits)
- Pass thesis defense

Non-Thesis Option:

- Seminar (CHEM 792: 1 credit)
- Take 14 credits of additional CHEM courses with approval of advisor
- Project (CHEM 796: 3 credits)

Chemistry – Applied Chemistry and Chemical Sciences PSM, MS

College of Arts and Sciences

Graduate Coordinator: Marion Franks

Email: mafranks@ncat.edu

Phone: 336-285-2230

Department Chair: Zerihun Assefa

Email: zassefa@ncat.edu

Phone: 336-285-2255

The Professional Science Master's program in Chemistry has the objective of advancing technical skills, industry-guided knowledge and business management. The program prepares students for career opportunities in businesses utilizing chemical and/or biochemical processes and instrumentation.

Additional Admission Requirements

- An undergraduate degree in science
- At least one year of physical chemistry and calculus courses consisting of differential and integral equations.
- Two of the three letters of recommendation should be from former science or math professors.

Program Outcomes:

- **Communication:** M.S. candidates will demonstrate the ability to comprehend, apply and evaluate information from chemistry literature which is to be orally presented and validated in a seminar.
- **Applied Chemistry Knowledge:** M.S. candidates will demonstrate chemistry proficiency in the sub-disciplines of chemistry: analytical, inorganic, organic, biochemistry and physical as it pertains to real life applications and product development
- **Research Training and Ethics:** M.S. candidates will acquire the basic tools needed to carry out independent chemical research. Students should become proficient in their specialized area of chemistry and successfully complete a written graduate level research project designed to address industrial and other collaborative needs.

Degree Requirements

Total credit hours: 30

- Core courses (12 credits): CHEM 711, 722, 732, 743
- Select 6 credit hours from: BIOL, CHEM, CHEN, MATH, PHYS with approval of advisor
- Select 9 credit hours from: ACCT 708, 714; ECON 706; MGMT 705, 712, 718
- Internship (CHEM 784: 3 credits)

Civil Engineering, MS

College of Engineering

Graduate Coordinator: Manoj Jha

Email: mkjha@ncat.edu **Phone:** 336-285-3678

Department Chair: Stephanie Luster-Teasley

Email: luster@ncat.edu **Phone:** 336-285-3679

The Master of Science in Civil Engineering program provides advanced study and research in the following areas: Environmental/Water Resources, Structures/Geotechnical, Transportation/Regional Development, Construction Management, and Energy Resources/ Systems.

Additional Admission Requirements

- Unconditional admission requires undergraduate degree from an ABET accredited Civil Engineering, Architectural Engineering, or Environmental Engineering program

Degree Requirements

Total credit hours: 30

- Core courses (9 credits): CIEN 700, 702, Advanced Mathematics course (CIEN approved)

Thesis option

- CIEN electives (9 credits): Take 9 credits from CIEN 600-799 with approval of advisor
- Electives (6 credits): Take 6 credit hours from CIEN 600-799 or other departments with approval of advisor
- Take CIEN 792 seminar
- Thesis (CIEN 797: 6 credits)
- Pass thesis defense

Project option

- CIEN electives (9 credits): Take 9 credits from CIEN 600-799 with approval of advisor
- Electives (9 credits): Take 9 credit hours from CIEN 600-799 or other departments with approval of advisor
- Take CIEN 792 seminar
- Project (CIEN 796: 3 credits)

Course option

- CIEN electives (9 credits): Take 9 credits from CIEN 600-799 with approval of advisor
- Electives (12 credits): Take 12 credit hours from CIEN 600-799 or other departments with approval of advisor
- Take CIEN 792 seminar
- Comprehensive exam

Civil Engineering – Systems Engineering, MS

College of Engineering

Graduate Coordinator: Manoj Jha

Email: mkjha@ncat.edu **Phone:** 336-285-3678

Department Chair: Stephanie Luster-Teasley

Email: luster@ncat.edu **Phone:** 336-285-3679

The Master of Science in Civil Engineering program provides advanced study and research in the following areas: Environmental/Water Resources, Structures/Geotechnical, Transportation/Regional Development, Construction Management, and Energy Resources/ Systems.

Additional Admission Requirements

- Unconditional admission requires undergraduate degree from an ABET accredited Civil Engineering, Architectural Engineering, or Environmental Engineering program

Degree Requirements

Total credit hours: 30

- Core courses (9 credits): CIEN 700, 702, 785
- Systems Engineering Core (9 credit hours): SYEN 605, 710, 715
- Systems Engineering Electives: Take 9 credit hours CIEN 614, 670, 785
- Electives (3 credits): Take 12 credit hours from CIEN 600-799 or other departments with approval of advisor
- Take CIEN 792 seminar

Computational Science and Engineering, MS

College of Engineering

Graduate Coordinator: Dukka KC **Email:** dbkc@ncat.edu

Phone: 336-285-3210

Department Chair: Marwan Bikdash **Email:** bikdash@ncat.edu

Phone: 336-334-7437

The MS in Computational Science and Engineering (CSE) is an interdisciplinary graduate program designed for students who seek to use advanced computational methods to solve large problems in diverse fields ranging from the basic sciences (physics, chemistry, mathematics, etc.) to sociology, biology, engineering, and economics. The mission of Computational Science and Engineering is to graduate professionals who (a) have expertise in developing novel computational methodologies and products, and/or (b) have extended their expertise in specific disciplines (in science, technology, engineering, and socioeconomics) with computational tools. The program offers two tracks: (a) the Computational Methods Track, which is designed primarily for students with undergraduate degrees in engineering, chemistry, physics, mathematics, and computer science who will be trained to develop problem-solving methodologies. Research in this track includes computational system theory, big data and computational statistics, high-performance computing and scientific visualization, multi-scale and multi-physics modeling, computational solid, fluid and nonlinear dynamics, computational geometry, and fast and scalable algorithms; (b) the Computational Applications Track, which is designed primarily for students with undergraduate degrees in chemistry, biology, psychology, business, finance and economics, technology and engineering, and agricultural sciences who will be trained to apply or extend computational tools and methods, as well as data acquisition, processing and visualization techniques, to study computationally intensive problems in their disciplines.

Additional Admission Requirements

- Approved Bachelor of Science or Bachelor of Engineering degree
- Knowledge of Calculus through differential equations and elementary numerical analysis
- Programming skills and working knowledge of at least one high-level programming language.

Program Outcomes:

- Students will demonstrate critical thinking and ability in conducting research in engineering, science and mathematics through computational modeling and simulations.
- Students will demonstrate mastery in communicating research results through publications that indicate effective content, organization and adherence to journal publication conventions.
- Students will explain the underlying principles behind scientific visualization of large data sets.
- Students will perform independent research in order to generate a dissertation of an original idea and to publish technical papers.

Degree Requirements

Total credit hours: 30

- Core courses (12 credits): CSE 702, 703, 801, 804

Thesis option

- Electives (9 credits): Take 9 credits from engineering, computer science, mathematics, physics, chemistry, biology, economics, business, agricultural science or other courses approved by the CSE department, with approval of advisor
- Select 2 additional credits to complete 30 credit requirement with approval of advisor. This can be thesis hours, continuation/residency credits, supervised teaching, supervised research, or approved graduate courses with approval of advisor
- At least 18 credit hours should be at 600-700 level

- Seminar (CSE 792: 1 credit)
- Thesis (CSE 797: 6 credits)
- Pass thesis defense

Project option

- Electives (12 credits): Take 12 credits from engineering, computer science, mathematics, physics, chemistry, biology, economics, business, agricultural science or other courses approved by the CSE department, with approval of advisor
- Select 2 additional credits to complete 30 credit requirement with approval of advisor. This can be continuation/residency credits, supervised teaching, supervised research, or approved graduate courses with approval of advisor
- At least 18 credit hours should be at 600-700 level
- Seminar (CSE 789: 1 credit)
- Project (CSE 796: 3 credits)

Course option

- Electives (15 credits): Take 15 credits from engineering, computer science, mathematics, physics, chemistry, biology, economics, business, agricultural science or other courses approved by the CSE department, with approval of advisor
- Select 2 additional credits to complete 30 credit requirement with approval of advisor. This can be continuation/residency credits, supervised teaching, supervised research, or approved graduate courses with approval of advisor
- Seminar (CSE 789: 1 credit)
- At least 18 credit hours should be at 600-700 level

Computational Science and Engineering – Systems Engineering, MS

College of Engineering

Graduate Coordinator: Dukka KC **Email:** dbkc@ncat.edu **Phone:** 336-285-3210

Department Chair: Marwan Bikdash **Email:** bikdash@ncat.edu **Phone:** 336-334-7437

The MS in Computational Science and Engineering (CSE) is an interdisciplinary graduate program designed for students who seek to use advanced computational methods to solve large problems in diverse fields ranging from the basic sciences (physics, chemistry, mathematics, etc.) to sociology, biology, engineering, and economics. The mission of Computational Science and Engineering is to graduate professionals who (a) have expertise in developing novel computational methodologies and products, and/or (b) have extended their expertise in specific disciplines (in science, technology, engineering, and socioeconomics) with computational tools. The program offers two tracks: (a) the Computational Methods Track, which is designed primarily for students with undergraduate degrees in engineering, chemistry, physics, mathematics, and computer science who will be trained to develop problem-solving methodologies. Research in this track includes computational system theory, big data and computational statistics, high-performance computing and scientific visualization, multi-scale and multi-physics modeling, computational solid, fluid and nonlinear dynamics, computational geometry, and fast and scalable algorithms; (b) the Computational Applications Track, which is designed primarily for students with undergraduate degrees in chemistry, biology, psychology, business, finance and economics, technology and engineering, and agricultural sciences who will be trained to apply or extend computational tools and methods, as well as data acquisition, processing and visualization techniques, to study computationally intensive problems in their disciplines.

Additional Admission Requirements

- Approved Bachelor of Science or Bachelor of Engineering degree
- Knowledge of Calculus through differential equations and elementary numerical analysis
- Programming skills and working knowledge of at least one high-level programming language.

Program Outcomes:

- Students will demonstrate critical thinking and ability in conducting research in engineering, science and mathematics through computational modeling and simulations.
- Students will demonstrate mastery in communicating research results through publications that indicate effective content, organization and adherence to journal publication conventions.
- Students will explain the underlying principles behind scientific visualization of large data sets.
- Students will perform independent research in order to generate a dissertation of an original idea and to publish technical papers.

Degree Requirements

Total credit hours: 30

- Core courses (12 credits): CSE 702, 703, 801, 804
- Systems Engineering Core (9 credit hours): SYEN 605, 710, 715
- Systems Engineering Electives: Take 9 credit hours from: BMEN 695, COMP 722, CSE 805, 806, ECEN 674, ISEN 658

Computational Science and Engineering, PhD

College of Engineering

Graduate Coordinator: Dukka KC **Email:** dbkc@ncat.edu

Phone: 336-334-7437

Department Chair: Marwan Bikdash **Email:** bikdash@ncat.edu

Phone: 336-334-7437

The PhD in Computational Science and Engineering (CSE) is an interdisciplinary graduate program designed for students who seek to use advanced computational methods to solve large problems in diverse fields ranging from the basic sciences (physics, chemistry, mathematics, etc.) to sociology, biology, engineering, and economics. The mission of Computational Science and Engineering is to graduate professionals who (a) have expertise in developing novel computational methodologies and products, and/or (b) have extended their expertise in specific disciplines (in science, technology, engineering, and socioeconomics) with computational tools. The Ph.D. program is designed for students with graduate and undergraduate degrees in a variety of fields including engineering, chemistry, physics, mathematics, computer science, and economics who will be trained to develop problem-solving methodologies and computational tools for solving challenging problems. Research in Computational Science and Engineering includes: computational system theory, big data and computational statistics, high-performance computing and scientific visualization, multi-scale and multi-physics modeling, computational solid, fluid and nonlinear dynamics, computational geometry, fast and scalable algorithms, computational civil engineering, bioinformatics and computational biology, and computational physics.

Additional Admission Requirements

- Master of Science or Engineering degree in Computational Science and Engineering (CSE) or in science, engineering, business, economics, technology or in a field allied to computational science or computational engineering field.
- GRE scores

Program Outcomes:

- Students will demonstrate critical thinking and ability in conducting research in engineering, science and mathematics through computational modeling and simulations.
- Students will demonstrate mastery in communicating research results through publications that indicate effective content, organization and adherence to journal publication conventions.
- Students will explain the underlying principles behind scientific visualization of large data sets.
- Students will perform independent research in order to generate a dissertation of an original idea and to publish technical papers.

Degree Requirements

Total credit hours: 62 (post baccalaureate)

- Core courses (12 credits): CSE 702, 703, 801, 804
- Electives (27 credits): Take 27 credits from engineering, computer science, mathematics, physics, chemistry, biology, economics, business, agricultural science or other courses approved by the CSE department, with approval of advisor
- Select 6 additional credits to complete 62 credit requirement with approval of advisor. This can be dissertation hours, continuation/residency credits, supervised teaching, supervised research, or approved graduate courses with approval of advisor
- At least 26 credit hours should be at 800-900 level
- Seminar (CSE 992: 2 credits)
- Dissertation (CSE 997: 15 credits)
- Pass qualifying exam, preliminary exam, dissertation defense

Dissertation Research:

A student may not register for dissertation credits before passing Qualifying Examination. No more than 15 dissertation credits are counted toward the total credit hours requirement for the degree.

Qualifying Examination:

The Qualifying Examination is given to assess the student's competence in a broad range of relevant subject areas. Only students with unconditional status and in good academic standing may take the Qualifying Examination. A student who wants to retake the Qualifying Examination must apply to retake the Qualifying Examination by the posted deadline. No student is permitted to take the Qualifying Examination more than twice. A student not recommended for re-examination or who fails the exam on a second attempt may be dismissed from the doctoral program.

Preliminary Oral Examination:

The Preliminary Oral Examination is conducted by the student's dissertation committee and is a defense of the student's dissertation proposal. Passing this exam satisfies requirements for Ph.D. Candidacy. Failure on the examination may result in dismissal from the doctoral program. The student's Advisory Committee may permit one re-examination. At least one full semester must elapse before the re-examination. Failure on the second attempt will result in dismissal from the doctoral program.

Admission to Candidacy

Student will be admitted to candidacy upon successful completion of the Qualifying Exam and the Preliminary oral Exam.

Final Oral Examination:

The Final Oral Examination is conducted by the student's dissertation committee. This examination is the final dissertation defense presentation that is scheduled after a dissertation is completed. The examination may be held no earlier than one semester (or four months) after admission to candidacy. Failure on the examination may result in dismissal from the doctoral program. The student's Advisory Committee may permit one re-examination. At least one full semester must elapse before the re-examination. Failure on the second attempt will result in dismissal from the doctoral program.

Submission of Dissertation:

Upon passing the Ph.D. Final Oral Examination, the Ph.D. student must have the dissertation approved by each member of the student's dissertation committee. The approved dissertation must be submitted to The Graduate College by the deadline given in the academic calendar, and must conform to the Graduate College's guidelines for theses and dissertations.

Computer Science, MS

College of Engineering

Graduate Coordinator: Huiming (Anna) Yu **Email:** cshmyu@ncat.edu **Phone:** 336-285-3699

Department Chair: Gerry Dozier **Email:** gvdozier@ncat.edu **Phone:** 336-334-7245

The MS in Computer Science program combines computer science fundamentals with practical knowledge and technical excellence in the most advanced technologies. Research is funded by agencies including the National Aeronautics and Space Administration, the U.S. Air Force, the National Security Agency, the Naval Oceanographic Office, National Science Foundation and among others. The research interests of the faculty include software engineering, information assurance, secure software engineering, artificial intelligence, computational science, distributed systems, multi-agent systems, computer security, trustworthy cloud computing and high performance computing. In addition to a general track, five additional tracks are offered in Software Engineering, Computational Science and Engineering, Information Assurance, Secure Software Engineering and Artificial Intelligence.

Additional Admission Requirements

- Unconditional admission requires a BS in Computer Science

Program Outcomes:

Graduates of the Computer Science Master's program will be able to: (1) apply knowledge of complex mathematics and computer science to develop software solutions to real world problems, (2) analyze and synthesize novel solutions to critical problems within the area of computer science, (3) design and implement software systems, (4) understand professional, legal and ethical issues, (5) effectively communicate, both orally and in writing, and (6) engage in lifelong learning.

Degree Requirements

Total credit hours: 30

- Core courses (9 credits): COMP 710, 755, 775

Thesis option

- COMP electives (9 credits): Take 9 credits of additional COMP 700-899 courses with approval of advisor
- Electives (6 credits): Take 6 credit hours from COMP 700-899 or other departments with approval of advisor
- Thesis (COMP 797: 6 credits)
- Pass thesis defense

Project option

- COMP electives (12 credits): Take 12 credits of additional COMP 700-899 courses with approval of advisor
- Electives (6 credits): Take 6 credit hours from COMP 700-899 or other departments with approval of advisor
- Project (COMP 796: 3 credits)

Course option

- COMP electives (15 credits): Take 15 credits of additional COMP 700-899 courses with approval of advisor
- Electives (6 credits): Take 6 credit hours from COMP 700-899 or other departments with approval of advisor

Computer Science, PhD

College of Engineering

Graduate Coordinator: Huiming (Anna) Yu **Email:** cshmyu@ncat.edu **Phone:** 336-285-3699

Department Chair: Gerry Dozier **Email:** gvdozier@ncat.edu **Phone:** 336-334-7245

The Ph.D. program in Computer Science presents both advanced instruction and opportunities for independent research. The Ph.D. degree is the highest academic degree offered, and graduates typically find employment as researchers in government or industry laboratories or as university faculty. Earning a Ph.D. degree requires initiative and responsibility, and the student is expected to make a significant contribution to computer-science knowledge by investigating a topic that is recognized as significant.

Additional Admission Requirements

- Bachelor of Science in computer science with a minimum GPA of 3.5 over the last 60 course credit hours of the undergraduate degree or Master of Science degree in Computer Science with a minimum GPA of 3.25.
- GRE test scores

Program Outcomes

- Graduates of the Ph.D. program will conduct advanced research in such computer science areas as information security, distributed systems, and artificial intelligence.
- Graduates will develop the ability to identify research problems in computer science and to develop solutions for them.
- Graduates will develop the ability to address important computing problems from a variety of areas, including business, the environment, the State's economy, healthcare, and law enforcement.
- Graduates will develop the ability to examine certain grand challenge problems in the discipline.
- Graduates will acquire the skills and abilities to be effective educators in computer science at the university level.

Degree Requirements

Total credit hours: 63 (post baccalaureate)

- Core courses (9 credits): COMP 710, 755, 775
- COMP electives (24 credits): Take 24 credits of additional COMP 700-899 courses with approval of advisor
- Electives (6 credits): Take 6 credit hours from COMP 700-899 or other departments with approval of advisor
- Take 6 credit hours: COMP 892, 994
- Dissertation (18 credits): COMP 997
- Pass qualifying exam, preliminary exam, dissertation defense

Dissertation Research:

A student may not register for dissertation credits before passing Qualifying Examination. No more than 18 dissertation credits are counted toward the total credit hours requirement for the degree.

Qualifying Examination:

The Qualifying Examination is given to assess the student's competence in a broad range of relevant subject areas. Only students with unconditional status and in good academic standing may take the Qualifying Examination. A student who wants to retake the Qualifying Examination must apply to retake the Qualifying Examination by the posted deadline. No student is permitted to take the Qualifying Examination

more than twice. A student not recommended for re-examination or who fails the exam on a second attempt may be dismissed from the doctoral program.

Preliminary Oral Examination:

The Preliminary Oral Examination is conducted by the student's dissertation committee and is a defense of the student's dissertation proposal. Passing this exam satisfies requirements for Ph.D. Candidacy. Failure on the examination may result in dismissal from the doctoral program. The student's Advisory Committee may permit one re-examination. At least one full semester must elapse before the re-examination. Failure on the second attempt will result in dismissal from the doctoral program.

Admission to Candidacy

Student will be admitted to candidacy upon successful completion of the Qualifying Exam and the Preliminary oral Exam.

Final Oral Examination:

The Final Oral Examination is conducted by the student's dissertation committee. This examination is the final dissertation defense presentation that is scheduled after a dissertation is completed. The examination may be held no earlier than one semester (or four months) after admission to candidacy. Failure on the examination may result in dismissal from the doctoral program. The student's Advisory Committee may permit one re-examination. At least one full semester must elapse before the re-examination. Failure on the second attempt will result in dismissal from the doctoral program.

Submission of Dissertation:

Upon passing the Ph.D. Final Oral Examination, the Ph.D. student must have the dissertation approved by each member of the student's dissertation committee. The approved dissertation must be submitted to The Graduate College by the deadline given in the academic calendar, and must conform to the Graduate College's guidelines for theses and dissertations.

Electrical Engineering, MS

School/College: College of Engineering

Graduate Coordinator: Jung H. Kim **Email:** kim@ncat.edu **Phone:** (336) 285-3713

Department Chair: John Kelly **Email:** jck@ncat.edu **Phone:** (336) 285-3712

The Master of Science Program in Electrical Engineering provides graduate level education for advanced professional practice or further graduate studies. The program offers the following four tracks: Computer Engineering, Communications and Signal Processing, Electronic and Optical Materials and Devices, and Power Systems and Control.

Additional Admission Requirements:

- Unconditional admission requires an undergraduate degree in Electrical Engineering from an ABET accredited institution with an overall 3.0 GPA in all engineering courses.

Degree requirements

Total credit hours: 30

- Required courses (9 credits): ECEN 649, 650, 656 or ECEN 621, 623, 647 or ECEN 625, 629, 702 or ECEN 668, 678, 870

Thesis option

- ECEN electives (9 credits): Take 9 credits from ECEN 600-800 with approval of advisor
- Technical Electives (6 credits): Take 6 credit hours with approval of advisor
- Thesis (ECEN 797: 6 credits)
- Attend master's seminar
- Pass thesis defense
- At least 18 credit hours should be at 600-700 level

Project option

- ECEN electives (9 credits): Take 9 credits from ECEN 600-800 with approval of advisor
- Technical Electives (9 credits): Take 9 credit hours with approval of advisor
- Project (ECEN 796: 3 credits)
- Attend master's seminar
- At least 18 credit hours should be at 600-700 level

Course option

- ECEN electives (9 credits): Take 9 credits from ECEN 600-800 with approval of advisor
- Technical Electives (12 credits): Take 12 credit hours with approval of advisor
- Attend master's seminar
- Pass exit exam
- At least 18 credit hours should be at 600-700 level

Electrical Engineering, PhD

School/College: College of Engineering

Graduate Coordinator: Jung H. Kim **Email:** kim@ncat.edu **Phone:** (336) 285-3713

Department Chair: John Kelly **Email:** jck@ncat.edu **Phone:** (336) 285-3712

The Doctoral Program in Electrical Engineering offers the following four tracks: Computer Engineering, Communications and Signal Processing, Electronic and Optical Materials and Devices, and Power Systems and Control.

Additional Admission Requirements

- Bachelor's degree in electrical/computer engineering from an ABET accredited university or from an acceptable institution of higher learning with an earned GPA of 3.5 or higher over the last 60 course credit hours of undergraduate degree or Master of Science in Electrical Engineering, Computer Engineering, or a related discipline from an acceptable institution of higher learning, and prior research experience.
- GRE scores
- At least one of the letters of recommendations must come from an individual knowledgeable of the student's graduate performance and potential

Degree Requirements

Total credit hours: 60 (post baccalaureate)

- Required courses (9 credits): ECEN 649, 650, 656 or ECEN 621, 623, 647 or ECEN 625, 629, 702 or ECEN 668, 678, 870
- ECEN electives (30 credits): Take 30 credits from ECEN 600-800 with approval of advisor
- Technical Electives (9 credits): Take 9 credit hours with approval of advisor
- Attend doctoral seminar
- Dissertation (ECEN 997: 12 credits)
- Pass qualifying exam, preliminary exam, dissertation defense
- At least 24 credit hours of course work should be at 800 level

Dissertation Research:

A student may not register for dissertation credits before passing Qualifying Examination. No more than 12 dissertation credits are counted toward the total credit hours requirement for the degree.

Qualifying Examination:

The Qualifying Examination is given to assess the student's competence in a broad range of relevant subject areas. Only students with unconditional status and in good academic standing may take the Qualifying Examination. A student who wants to retake the Qualifying Examination must apply to retake the Qualifying Examination by the posted deadline. No student is permitted to take the Qualifying Examination more than twice. A student not recommended for re-examination or who fails the exam on a second attempt may be dismissed from the doctoral program.

Preliminary Oral Examination:

The Preliminary Oral Examination is conducted by the student's dissertation committee and is a defense of the student's dissertation proposal. Passing this exam satisfies requirements for Ph.D. Candidacy. Failure on the examination may result in dismissal from the doctoral program. The student's Advisory Committee may permit one re-examination. At least one full semester must elapse before the re-examination. Failure on the second attempt will result in dismissal from the doctoral program.

Admission to Candidacy

Student will be admitted to candidacy upon successful completion of the Qualifying Exam and the Preliminary oral Exam.

Final Oral Examination:

The Final Oral Examination is conducted by the student's dissertation committee. This examination is the final dissertation defense presentation that is scheduled after a dissertation is completed. The examination may be held no earlier than one semester (or four months) after admission to candidacy. Failure on the examination may result in dismissal from the doctoral program. The student's Advisory Committee may permit one re-examination. At least one full semester must elapse before the re-examination. Failure on the second attempt will result in dismissal from the doctoral program.

Submission of Dissertation:

Upon passing the Ph.D. Final Oral Examination, the Ph.D. student must have the dissertation approved by each member of the student's dissertation committee. The approved dissertation must be submitted to The Graduate College by the deadline given in the academic calendar, and must conform to the Graduate College's guidelines for theses and dissertations.

Elementary Education K-6, MAEd

College of Education

Graduate Coordinator: Kimberly Erwin

Email: kderwin@ncat.edu **Phone:** 336-334-7848

Department Chair: Erika R. Williams

Email: ewilliam@ncat.edu **Phone:** (336) 334-7848

The Master of Arts in Education (MAEd) Elementary Education program prepares highly-qualified K-6 classroom teachers who utilize research-verified pedagogical approaches to engage students from diverse populations in developmentally-appropriate, rigorous, and relevant instruction. Through courses in research and inquiry, current research in the elementary classroom, standards and accountability, and issues and trends in urban education, candidates in the Master of Arts in Education, Elementary Education program develop knowledge, skills, dispositions, and professional attitudes that empower them to become lifelong learners, skilled researchers, and exemplary educational leaders inside and outside K-6 learning contexts while concurrently developing the skills necessary to attain certification from the National Board Professional Teaching Standards. The MAEd program in Elementary Education is aligned with professional standards commensurate with the Interstate Teacher Assessment and Support Consortium (InTASC), the National Council for the Accreditation of Teacher Education (NCATE), the North Carolina Department of Public Instruction (NCDPI), and National Board Professional Teaching Standards (NBPTS). The Master of Arts in Education (MAEd) program in Elementary Education is an accredited program by the National Council for the Accreditation of Teacher Education (NCATE) and by the North Carolina Department of Public Instruction (NCDPI).

Teacher Education Licensure: Completing this master's degree and obtaining a teaching license are separate processes. Admission to this master's program does not guarantee admission to the Teacher Education Licensure program. To be recommended for licensure, candidates must first be formally admitted to the Teacher Education Licensure Program. Failure to complete the Teacher Education admission requirements during the first semester of enrollment may result in the student's inability register for certain required courses. Applicants and current students should review licensure requirements at <http://www.ncat.edu/academics/schools-colleges/soe/teacher-education/index.html> or visit the School of Education for guidance on specific requirements.

Additional Admission Requirements

- Graduate Record Examination (GRE) Scores
- Standard Professional 1 or 2 NC Teaching License in the area of study
- Two Page Double-Spaced Statement of Purpose or Intent

Program Outcomes:

Candidates in the MAED Elementary Education program will: (1) demonstrate effective research writing skills appropriate for educational scholars, (2) demonstrate effective knowledge, skills, and attitudes in diversity issues, learning theories, technological skills, and methods of instruction, (3) demonstrate the ability to implement research-based content pedagogy aligned to the North Carolina Common Core and Essential Skills Standards with K-6 students, and (4) demonstrate their depth of content knowledge and breadth of content pedagogical skills for K-6 students from diverse backgrounds.

Degree Requirements

Total credit hours: 30

- Core courses (9 credit hours): CUIN 711, 729, 783
- Select 9 credits from: ELED 751, 752, 753, 754
- Phase II: Take 12 credits: ELED 719, 740, 755, 757

Energy & Environmental Systems, PhD

College of Arts and Sciences

Graduate Coordinator: Keith Schimmel

Email: schimmel@ncat.edu

Phone: 336-285-2329

Department Chair: Keith Schimmel

Email: schimmel@ncat.edu

Phone: 336-285-2329

The Energy and Environmental Systems PhD program is designed to prepare men and women for positions in research and consulting in industry, government and service organizations, and teaching and research positions in colleges and universities. Graduates will be able to: conceive, develop, and conduct original research leading to useful applications in energy and environmental systems; Incorporate into their professional work considerations relating to scientific and social aspects of energy and environmental systems; and Demonstrate effective written and oral communication skills related to research issues in energy and environmental systems.

Additional Admission Requirements

- B.S. degree in a science, engineering, technology, or economics discipline with GPA ≥ 3.5 or a master's degree in a science, engineering, technology; or economics discipline with GPA ≥ 3.25 from a college or university recognized by a regional or general accrediting agency
- GRE or GMAT verbal and quantitative scores

Program Outcomes:

Upon completion of the doctoral program in Energy and Environmental Systems:

- Graduates will be able to communicate research findings orally and in writing according to the needs of the audience.
- Graduates will be able to assess discipline related literature for unanswered research questions.
- Graduates will be able to develop advanced level research projects related to their interests in energy and environmental systems.
- Graduates will be able to analyze data in terms of applicable theories in energy and environmental systems.

Degree Requirements

Total credit hours: 70 (post baccalaureate)

- Core courses (10 credits): EES 800, 812, 813, 830
- Supervised Teaching (EES 993: 3 credits)
- Select 3 credits from EES 984 or 985 with approval of advisor
- Seminar (EES 992: 6 credits): Take EES 992 six times in six semesters
- Dissertation (EES 997: 15 credits)
- Pass qualifying exam, preliminary exam, and dissertation defense
- Take 33 credit hours as specified below within a concentration:

Energy and Environmental Systems

- Select 33 credit hours of 700 and 800 level courses from: EES; AET; AGECE; AGRI; ANSC; BIOL; BMEN; CHEM; CHEN; CIEN; CM; COMP; CSE; ECEN; ECON; ENVS; FCS; HORT; ISEN; LAND; MATH; MEEN; NANO; NARS; PHYS; PLSC; SLSC with approval of advisor

Atmospheric Sciences

- Select 18 credit hours from EES 850-859, 885 with approval of advisor
- Select 15 credit hours of 700 and 800 level courses from: EES; AET; AGECE; AGRI; ANSC; BIOL; BMEN; CHEM; CHEN; CIEN; CM; COMP; CSE; ECEN; ECON; ECEN; ENVS; FCS; HORT; ISEN; LAND; MATH; MEEN; NANO; NARS; PHYS; PLSC; SLSC with approval of advisor

Sustainable Bioproducts

- Select 9 credit hours from EES 841-844, 885
- Select 24 credit hours of 700 and 800 level courses from: EES; AET; AGECE; AGRI; ANSC; BIOL; BMEN; CHEM; CHEN; CIEN; CM; COMP; CSE; ECEN; ECON; ECEN; ENVIS; FCS; HORT; ISEN; LAND; MATH; MEEN; NANO; NARS; PHYS; PLSC; SLSC with approval of advisor

Energy & Environmental Science & Economics

- Select 15 credit hours of 700 and 800 level courses from: EES; AGECE; ECON with approval of advisor
- Select 18 credit hours of 700 and 800 level courses from: EES; AET; AGECE; AGRI; ANSC; BIOL; BMEN; CHEM; CHEN; CIEN; CM; COMP; CSE; ECEN; ECON; ECEN; ENVIS; FCS; HORT; ISEN; LAND; MATH; MEEN; NANO; NARS; PHYS; PLSC; SLSC with approval of advisor

Dissertation Research:

A student may not register for dissertation credits before passing Qualifying Examination. No more than 15 dissertation credits are counted toward the total credit hours requirement for the degree.

Qualifying Examination:

The Qualifying Examination is given to assess the student's competence in a broad range of relevant subject areas. Only students with unconditional status and in good academic standing may take the Qualifying Examination. A student who wants to retake the Qualifying Examination must apply to retake the Qualifying Examination by the posted deadline. No student is permitted to take the Qualifying Examination more than twice. A student not recommended for re-examination or who fails the exam on a second attempt may be dismissed from the doctoral program.

Preliminary Oral Examination:

The Preliminary Oral Examination is conducted by the student's dissertation committee and is a defense of the student's dissertation proposal. Passing this exam satisfies requirements for Ph.D. Candidacy. Failure on the examination may result in dismissal from the doctoral program. The student's Advisory Committee may permit one re-examination. At least one full semester must elapse before the re-examination. Failure on the second attempt will result in dismissal from the doctoral program.

Admission to Candidacy

Student will be admitted to candidacy upon successful completion of the Qualifying Exam and the Preliminary oral Exam.

Final Oral Examination:

The Final Oral Examination is conducted by the student's dissertation committee. This examination is the final dissertation defense presentation that is scheduled after a dissertation is completed. The examination may be held no earlier than one semester (or four months) after admission to candidacy. Failure on the examination may result in dismissal from the doctoral program. The student's Advisory Committee may permit one re-examination. At least one full semester must elapse before the re-examination. Failure on the second attempt will result in dismissal from the doctoral program.

Submission of Dissertation:

Upon passing the Ph.D. Final Oral Examination, the Ph.D. student must have the dissertation approved by each member of the student's dissertation committee. The approved dissertation must be submitted to The Graduate College by the deadline given in the academic calendar, and must conform to the Graduate College's guidelines for theses and dissertations.

English and African American Literature, MA

College of Arts and Sciences

Graduate Coordinator: Pauline Uwakweh

Email: pauwakwe@ncat.edu

Phone: 336-285-2329

Department Chair: Elon Kulii

Email: ekulii@ncat.edu

Phone: 336-285-3516

The objective of the M.A. program in English and African American literature is to provide in-depth training in English Education; English, American and African American literature; folklore and language. The department introduces students to a diverse range of graduate-level work, including critical theory, graduate literary studies, and contemporary practices in grammar and rhetoric. Students' exposure to various genres and works of African American, American and English literatures will provide a substantial foundation for continued study at the doctoral level as well as preparation for various professional and teaching contexts. The program provides students the opportunity to explore critical theories and hone their critical reading, thinking and writing skills. It also offers a solid foundation for those who may choose to seek a Ph.D. in such disciplines as African American, Comparative, and English Literatures as well as African American, Africana, Cultural, Ethnic, Gender, Subaltern and Women's Studies.

Additional Admission Requirements

1. At least 24 undergraduate credit hours in English
2. GRE Test Scores

Degree Requirements

Total credit hours: 30

- Core Courses (9 credit hours): ENGL 700, 753, 755

Thesis Option

- Select 9 credit hours in African American Literature from: ENGL 631, 650, 652, 654, 656, 658, 660, 744, 760, 762, 764, 766
- Select 6 credit hours in English and American Literature from: ENGL 603, 628, 631, 653, 672, 701, 703, 705, 706, 707, 709, 712, 721, 722, 723, 724, 730, 731, 744
- Thesis: ENGL 797 (6)

Non-Thesis Option

- Select 12 credit hours in African American Literature from: ENGL 631, 650, 652, 654, 656, 658, 660, 744, 760, 762, 764, 766
- Select 9 credit hours in English and American Literature from: ENGL 603, 628, 631, 653, 672, 701, 703, 705, 706, 707, 709, 712, 721, 722, 723, 724, 730, 731, 744

Food and Nutritional Sciences, MS

College of Agriculture and Environmental Science

Graduate Coordinator: Lynda Brown

Email: imbrown2@ncat.edu

Phone: 336-285-3644

Department Chair: Jane Walker

Email: walkerj@ncat.edu

Phone: 336-285-3633

The Master of Science in Food and Nutritional Sciences is designed to develop the basic knowledge and skills necessary to undertake research in Food and Nutritional Sciences and other related areas. It also develops competencies to work as food and nutrition specialists in education, or with other community nutrition agencies and food industries. The program also develops theoretical and experimental competencies necessary to pursue additional graduate studies or obtain professional degrees.

Additional Admission Requirements

1. Unconditional admission requires an earned baccalaureate degree in food and nutrition or related field from an accredited institution
2. Applicants without the following background courses or their equivalent will be required to take them as prerequisites: FCS 245: Introduction to Food Science, FCS 345: Food Chemistry, FCS 357: Introduction to Human Nutrition, FCS 457: Advanced Nutrition
3. Resume

Program Outcomes:

1. Upon completion of their coursework, students will accurately communicate in writing their knowledge of advanced concepts and principles related to food and nutritional sciences.
2. Upon completion of their coursework, students will effectively express in an oral presentation their knowledge of food and nutritional sciences concepts, principles and trends.
3. Upon completion of core courses, students will read and analyze scholarly literature in food and nutritional sciences for accuracy of research techniques and contributions to the discipline.
4. Upon completion of the thesis option, students will develop research questions, hypotheses and research methodology to address a problem in the field of food and nutritional sciences.
5. Upon completion of the program, students will identify and apply appropriate theories to address food and nutrition related issues impacting society.

Degree Requirements

Total credit hours: 30

- Take Core courses (10 credits): FCS 711, 730, 735, 789

Thesis option:

- Take 6 credits: CHEM 651; ABM 805
- Electives: Select 8 credit hours from FCS or related disciplines with approval of advisor
- Thesis (FCS 797: 6 credits)
- Pass thesis defense
- Pass comprehensive exam

Non-thesis Option:

- Take 6 credits: CHEM 651; ABM 805
- Electives: Select 11 credit hours from FCS or related disciplines with approval of advisor
- Practicum (FCS 784: 3 credits)
- Pass comprehensive exam

Industrial and Systems Engineering, MS

College of Engineering

Graduate Coordinator: Tonya Smith-Jackson **Email:** tsmithj@ncat.edu

Phone: 336-285-3759

Department Chair: Tonya Smith-Jackson

Email: tsmithj@ncat.edu

Phone: 336-285-3759

The Master of Science (M.S.) in Industrial and Systems Engineering (ISE) program prepares students for successful careers in industry and continuation to doctoral study. The program emphasizes the systems engineering, collaboration and engagement skills critical to addressing the complex societal problems of tomorrow. ISE graduate students tackle these problems in a supportive environment working with nationally-recognized faculty. ISE programs are inclusive of many undergraduate majors. Any engineering major may choose graduate education in ISE to expand systems skills. Many related non-engineering majors might choose ISE with some background courses to expand technical capability.

Program Outcomes:

The Master of Science in Industrial and Systems Engineering program will prepare graduates to:

- Decompose systems into component parts and logically model and evaluate using mathematical, statistical and computational tools.
- Construct and improve integrated systems or processes consisting of people, materials, information, equipment and energy considering life cycle factors.
- Formulate and solve multi-objective problems using industrial and systems engineering methods and tools.
- Apply systems analysis, synthesis, and problem-solving to real world settings to reduce cost and improve productivity and quality.
- Perform presentable research under the supervision of a faculty member.
- Communicate Industrial and Systems technical information a professional level in written, oral, and business graphics formats.

Degree Requirements:

Total credit hours: 30

- Core courses (12 credits): ISEN 625, 655, 665, 675

Thesis option

- ISEN electives (12 credits): Take 12 credits of additional ISEN courses with approval of advisor
- Thesis (ISEN797: 6 credits)
- ISEN Seminar: Take twice in two semesters

Project option

- ISEN electives (15 credits): Take 15 credits of additional ISEN courses with approval of advisor
- Project (ISEN 796: 3 credits)
- ISEN Seminar: Take twice in two semesters

Course option

- ISEN electives (18 credits): Take 18 credits of additional ISEN courses with approval of advisor
- Pass comprehensive exam
- ISEN Seminar: Take twice in two semesters

Industrial and Systems Engineering – Systems Engineering, MS

College of Engineering

Graduate Coordinator: Tonya Smith-Jackson **Email:** tsmithj@ncat.edu **Phone:** 336-285-3759

Department Chair: Tonya Smith-Jackson **Email:** tsmithj@ncat.edu **Phone:** 336-285-3759

The Master of Science (M.S.) in Industrial and Systems Engineering (ISE) program prepares students for successful careers in industry and continuation to doctoral study. The program emphasizes the systems engineering, collaboration and engagement skills critical to addressing the complex societal problems of tomorrow. ISE graduate students tackle these problems in a supportive environment working with nationally-recognized faculty. ISE programs are inclusive of many undergraduate majors. Any engineering major may choose graduate education in ISE to expand systems skills. Many related non-engineering majors might choose ISE with some background courses to expand technical capability.

Program Outcomes:

The Master of Science in Industrial and Systems Engineering program will prepare graduates to:

- Decompose systems into component parts and logically model and evaluate using mathematical, statistical and computational tools.
- Construct and improve integrated systems or processes consisting of people, materials, information, equipment and energy considering life cycle factors.
- Formulate and solve multi-objective problems using industrial and systems engineering methods and tools.
- Apply systems analysis, synthesis, and problem-solving to real world settings to reduce cost and improve productivity and quality.
- Perform presentable research under the supervision of a faculty member.
- Communicate Industrial and Systems technical information a professional level in written, oral, and business graphics formats.

Degree Requirements:

Total credit hours: 30

- Core courses (12 credits): ISEN 625, 655, 665, 675
- Systems Engineering Core (9 credit hours): SYEN 605, 710, 715
- Systems Engineering Electives: Take 9 credit hours: ISEN 658, 664, 721
- ISEN Seminar: Take twice in two semesters

Industrial and Systems Engineering, PhD

College of Engineering

Graduate Coordinator: Steven Jiang

Email: xjiang@ncat.edu

Phone: 336-285-3726

Department Chair: Tonya Smith-Jackson

Email: tsmithj@ncat.edu

Phone: 336-285-3759

The Doctor of Philosophy (Ph.D.) in Industrial and Systems Engineering (ISE) program prepares students for successful careers as teachers, researchers, and leaders in academia, industry and the public sector. The program emphasizes the systems engineering, collaboration and engagement skills critical to addressing the complex societal problems of tomorrow. ISE graduate students tackle these problems in a supportive environment working with nationally-recognized faculty.

Additional Admission Requirements

- At least one degree in Engineering or Computer Science.
- Bachelor of Science degree in Engineering or Computer Science from an ABET accredited program with a cumulative GPA of 3.5 or above or Master of Science degree in a discipline related to Industrial & Systems Engineering with a cumulative GPA of 3.3
- A Graduate Record Exam (GRE) Aptitude Exam score

Program Outcomes:

The Doctor of Philosophy in Industrial and Systems Engineering program will prepare graduates to

- Demonstrate broad knowledge of industrial and systems engineering sub-disciplines and deep knowledge of a specific sub-discipline.
- Effectively teach industrial and systems engineering methods and tools.
- Independently perform research with mentoring from a faculty member.
- Decompose systems into component parts and logically model and evaluate using mathematical, statistical and computational tools.
- Construct and improve integrated systems or processes consisting of people, materials, information, equipment and energy considering life cycle factors.
- Formulate and solve multi-objective problems using industrial and systems engineering methods and tools.
- Communicate Industrial and Systems Engineering research information in written, oral, and presentation formats.

Degree Requirements:

Total credit hours: 69 (post baccalaureate)

- Core courses (12 credits): ISEN 625, 655, 665, 675
- ISEN specified courses (12 credits): Select 12 credit hours from ISEN 721, 812, 813, 814, 821 or ISEN 833, 841, 852, 853
- ISEN courses (12 credits): Take additional 12 credit hours of graduate level ISEN courses with approval of advisor
- Engineering courses (12 credits): Take 12 credit hours of additional engineering courses at 700 or 800 level with approval of advisor
- At least 21 course credits should be at 800 level
- Seminar (3 credits): Take ISEN 992 three times in three semesters
- Dissertation (18 credits): ISEN 997
- Pass qualifying exam, preliminary exam, dissertation defense

Dissertation Research:

A student may not register for dissertation credits before passing Qualifying Examination. No more than 18 dissertation credits are counted toward the total credit hours requirement for the degree.

Qualifying Examination:

The Qualifying Examination is given to assess the student's competence in a broad range of relevant subject areas. Only students with unconditional status and in good academic standing may take the Qualifying Examination. A student who wants to retake the Qualifying Examination must apply to retake the Qualifying Examination by the posted deadline. No student is permitted to take the Qualifying Examination more than twice. A student not recommended for re-examination or who fails the exam on a second attempt may be dismissed from the doctoral program.

Preliminary Oral Examination:

The Preliminary Oral Examination is conducted by the student's dissertation committee and is a defense of the student's dissertation proposal. Passing this exam satisfies requirements for Ph.D. Candidacy. Failure on the examination may result in dismissal from the doctoral program. The student's Advisory Committee may permit one re-examination. At least one full semester must elapse before the re-examination. Failure on the second attempt will result in dismissal from the doctoral program.

Admission to Candidacy

Student will be admitted to candidacy upon successful completion of the Qualifying Exam and the Preliminary oral Exam.

Final Oral Examination:

The Final Oral Examination is conducted by the student's dissertation committee. This examination is the final dissertation defense presentation that is scheduled after a dissertation is completed. The examination may be held no earlier than one semester (or four months) after admission to candidacy. Failure on the examination may result in dismissal from the doctoral program. The student's Advisory Committee may permit one re-examination. At least one full semester must elapse before the re-examination. Failure on the second attempt will result in dismissal from the doctoral program.

Submission of Dissertation:

Upon passing the Ph.D. Final Oral Examination, the Ph.D. student must have the dissertation approved by each member of the student's dissertation committee. The approved dissertation must be submitted to The Graduate College by the deadline given in the academic calendar, and must conform to the Graduate College's guidelines for theses and dissertations.

Information Technology, MS

College of Science and Technology

Graduate Coordinator: Qing-An Zeng

Email: qzeng@ncat.edu

Phone: 336-285-3148

Department Chair: Clay Gloster, Jr.

Email: cgloster@ncat.edu

Phone: 336-285-3134

The Master of Science in Information Technology prepares students to pursue technical, as well as management careers in all employment sectors. The program emphasizes acquisition of sound theoretical concepts with intensive “hands-on” experience in the area of information technology. The courses are taught by faculty with high level expertise gained through their research activity, affiliations with industry and professional experience. Graduates of the program work in a variety of positions, some of which include: database administrator, network administrator, system analyst, IT consultant, and project manager. Recent graduates are employed with John Deere, IBM, USAA, EMC, Accenture, BB&T, First Citizens, Met Life, AT&T, General Electric, Northrop Grumman, BlueCross BlueShield, and local, state, and federal agencies. Students also have the opportunity to pursue Doctoral study.

Learning Outcomes

- **Communication Skills:** Students completing the MS degree program in Information Technology will exhibit effective communication skills (written, oral, graphic and interpersonal) appropriate for professionals in this field of study at the master’s level.
- **Critical Thinking Skills:** Students completing the MS degree program in Information Technology will effectively use quantitative and/or qualitative analytical problem-solving skills appropriate for professionals in this field of study at the master’s level.
- **Disciplinary Expertise:** Students completing the MS degree program in Information Technology will demonstrate a level of discipline-specific expertise (knowledge, skills, and professionalism) appropriate for professionals in information technology at the master’s level.
- **Research/Creative Engagement:** Students completing the MS degree program in Information Technology will demonstrate an ability to engage productively in the review and conduct of disciplinary research and creative professional activity appropriate for professionals in information technology at the master’s level.

Degree Requirements

Total credit hours: 30

- Core courses (9 credit hours): ITT 700, 702, 703

Thesis option

- Select 15 credit hours from: ITT 605, 610, 615, 620, 625, 650, 655, 665, 685, 725, 729, 731, 735, 745, 750, 752, 789; ECT 759
- Thesis: Select 6 credit hours from: ITT 791, 792, 793, 794

Non-Thesis option

- Select 21 credit hours from: ITT 605, 610, 615, 620, 625, 650, 655, 665, 685, 725, 729, 731, 735, 745, 750, 752, 789; ECT 759

Instructional Technology, MS

College of Education

Graduate Coordinator: Erika Williams

Email: ewilliam@ncat.edu **Phone:** (336) 285-4411

Department Chair: Erika R. Williams

Email: ewilliam@ncat.edu **Phone:** (336) 285-4411

The Master of Science in Instructional Technology program prepares highly-qualified instructional technologists for K-12 schools, businesses, and industries. Through courses in instructional design, multimedia development and evaluation, media and technology, and assistive technology, candidates in the Master of Science in Instructional Technology develop knowledge, skills, dispositions, and professional attitudes that empower them to become lifelong learners and exemplary instructional technologists in various professional contexts. The MS program in Instructional Technology is aligned with professional standards commensurate with the Interstate Teacher Assessment and Support Consortium (InTASC), the National Council for the Accreditation of Teacher Education (NCATE), the North Carolina Department of Public Instruction (NCDPI), and National Board Professional Teaching Standards (NBPTS). The Master of Science (MS) program in Instructional Technology is an accredited program by the National Council for the Accreditation of Teacher Education (NCATE) and by the North Carolina Department of Public Instruction (NCDPI).

Teacher Education Licensure: Completing this master's degree and obtaining a teaching license are separate processes. Admission to this master's program does not guarantee admission to the Teacher Education Licensure program. To be recommended for licensure, candidates must first be formally admitted to the Teacher Education Licensure Program. Failure to complete the Teacher Education admission requirements during the first semester of enrollment may result in the student's inability to register for certain required courses. Applicants and current students should review licensure requirements at <http://www.ncat.edu/academics/schools-colleges/soe/teacher-education/index.html> or visit the School of Education for guidance on specific requirements.

Additional Admission Requirements

- Standard Professional 1 or 2 NC Teaching License required for Media Coordinator track and the Instructional Technology Director track
- Graduate Record Examination (GRE) Scores

Program Outcomes

Candidates in the MS Instructional Technology program will:

- Demonstrate effective critical writing skills appropriate for educational scholars according to current standards of the profession
- Demonstrate effective knowledge, skills, and attitudes in diversity issues, learning theories, technological skills, and methods of instruction
- Demonstrate their depth of technological knowledge and breadth of technological skills for appropriate learning contexts.

Degree Requirements

Total credit hours: 30

- Take 18 credits: INST 700, 702, 703, 722, 735; CUIN 711
- Electives: Select 9 credits from INST 613, 614, 680, 705, 721, 723, 752; ENGL 626, 627 with approval of advisor
- Internship (INST 785: 3 credits)

Leadership Studies, PhD

College of Education

Graduate Coordinator: Keith Graves

Email: kagraves@ncat.edu

Phone: 336-285-2145

Department Chair: Comfort Okpala

Email: cookpala@ncat.edu

Phone: 336-256-2342

The doctoral program in leadership studies prepares tomorrow's leaders to solve societal challenges through the study of theoretical and practical knowledge in leadership studies. Through its commitment to civic engagement, transformative research and creative scholarship the program produces critically minded scholars who are social justice advocates capable of transforming organizations to maximize human potential.

Additional Admission Requirements

- Graduate Record Examinations (GRE), Graduate Management Admission Test (GMAT), or Miller Analogies Test (MAT)
- Three additional professional letters of recommendation from professors or employers. The recommendation letters should be submitted by the same individuals who complete the recommendation form included in the standard Graduate College application.
- A current resume or curriculum vita
- Statement of Purpose: In two double-spaced pages explain how earning a Ph.D. in Leadership Studies fits in with your academic/professional and personal goals; describe one or two of the key research topics that you may want to investigate as part of your research agenda; and discuss a key leadership lesson you have learned from your leadership experiences within or outside your profession.
- Master's or J.D. from a college or university recognized by a regional or general accrediting agency.
- Minimum cumulative Grade Point Average of 3.50 (on a 4.00 scale) in all graduate coursework.
- At least five years of professional work experience at the executive or managerial level
- Interview: After initial review of all applications, the most qualified candidates will be invited for a group interview with the Leadership Studies faculty.

Program Outcomes

- Demonstrate understanding of major leadership theories in Leadership Studies, and the ability to analyze and critique these theories, and apply these theories in diverse settings.
- Effectively demonstrate decision making skills and a repertoire of knowledge needed to lead, organize, and engage diverse local, national, and global communities.
- Able to use a range of perspectives from interdisciplinary fields of study particularly to provide leadership that addresses societal challenges.
- Articulate an understanding of the role of ethics in leadership, and develop ethical reasoning as well as reflection skills that promote social justice.
- Demonstrate the ability to design, analyze, critique, and conduct research using qualitative, quantitative, and mixed methods research techniques.

Degree Requirements

Total credit hours: 48 (post master's)

- Take Core courses (12 credits): LEST 800, 802, 810, 818
- Take 9 credit hours: LEST 815, 860, 862
- Select 3 credits from: LEST 817, 861, 863, 864, 865, INST 753, or another methodology course with approval of advisor
- Take LEST 850 (3 credits)
- Select 9 credits in LEST or related areas with approval of advisor
- Dissertation (12 credits): LEST 997

- Pass qualifying exam, preliminary exam, dissertation defense

Dissertation Research:

A student may not register for dissertation credits before passing Qualifying Examination. No more than 12 dissertation credits are counted toward the total credit hours requirement for the degree.

Qualifying Examination:

The Qualifying Examination is given to assess the student's competence in a broad range of relevant subject areas. Only students with unconditional status and in good academic standing may take the Qualifying Examination. A student who wants to retake the Qualifying Examination must apply to retake the Qualifying Examination by the posted deadline. No student is permitted to take the Qualifying Examination more than twice. A student not recommended for re-examination or who fails the exam on a second attempt may be dismissed from the doctoral program.

Preliminary Oral Examination:

The Preliminary Oral Examination is conducted by the student's dissertation committee and is a defense of the student's dissertation proposal. Passing this exam satisfies requirements for Ph.D. Candidacy. Failure on the examination may result in dismissal from the doctoral program. The student's Advisory Committee may permit one re-examination. At least one full semester must elapse before the re-examination. Failure on the second attempt will result in dismissal from the doctoral program.

Admission to Candidacy

Student will be admitted to candidacy upon successful completion of the Qualifying Exam and the Preliminary Oral Exam.

Final Oral Examination:

The Final Oral Examination is conducted by the student's dissertation committee. This examination is the final dissertation defense presentation that is scheduled after a dissertation is completed. The examination may be held no earlier than one semester (or four months) after admission to candidacy. Failure on the examination may result in dismissal from the doctoral program. The student's Advisory Committee may permit one re-examination. At least one full semester must elapse before the re-examination. Failure on the second attempt will result in dismissal from the doctoral program.

Submission of Dissertation:

Upon passing the Ph.D. Final Oral Examination, the Ph.D. student must have the dissertation approved by each member of the student's dissertation committee. The approved dissertation must be submitted to The Graduate College by the deadline given in the academic calendar, and must conform to the Graduate College's guidelines for theses and dissertations.

Master of Arts in Teaching - Biology Education, MAT

College of Science and Technology

Graduate Coordinator: Mary A. Smith

Email: smithma @ncat.edu

Phone: 336-285-2160

Department Chair: Mary A. Smith

Email: smithma @ncat.edu

Phone: 336-285-2160

Situated within the School of Education's conceptual framework of "Professional Educator: A Catalyst for Learning," the M.A.T in Biology Education program is designed for college graduates who have decided to enter the teaching profession, many of whom will already be lateral entry teachers, teachers changing fields and perspective candidates who are taking coursework before entering the classroom. It is another way of addressing the critical teacher shortage, since post baccalaureate students accepted into this program will have the academic credentials and maturity necessary to complete both introductory and advanced work in teacher education in a graduate level program. The Masters of Art in Teaching will enable prospective teachers, who bring content knowledge to the graduate degree, the opportunity to develop the knowledge, skills, and dispositions to become excellent teachers.

Teacher Education Licensure: Completing this master's degree and obtaining a teaching license are separate processes. Admission to this master's program does not guarantee admission to the Teacher Education Licensure program. To be recommended for licensure, candidates must first be formally admitted to the Teacher Education Licensure Program. Failure to complete the Teacher Education admission requirements during the first semester of enrollment may result in the student's inability to register for certain required courses. Applicants and current students should review licensure requirements at <http://www.ncat.edu/academics/schools-colleges1/soe/teacher-education/index.html> or visit the School of Education for guidance on specific requirements.

Additional Admission Requirements

- 24 credit hours of content-related course work with a grade of C or better
- Verification of criminal background
- Unconditional admission requires an undergraduate GPA of 2.8 or higher

Program Outcomes

- **SLO 1 Content Knowledge:** Candidates in the MAT Biology Secondary Education Program will illustrate their ability to align learning theories, biological content knowledge, pedagogical content knowledge, and the Common Core and North Carolina Essential Standards as indicated by passing scores on the Praxis II Secondary Biology Exam.
- **SLO 2 Communication:** During CUIIN 660 Clinical Practice in 21st Century Classroom course, candidates will communicate effectively orally and in writing with students from diverse backgrounds (grades 9-12) according to standards commonly practiced in the profession.
- **SLO 3 Critical Thinking:** In BIOL 635 and CUIIN 660, candidates will effectively develop and implement the Content Area Instructional Unit Work Sample (CAIUWS).

Degree Requirements

Total Credit Hours: 30

Certificate Phase (21 credit hours)

- Core courses (9 credit hours): CUIIN 618, 715, 785
- Take 12 credit hours: CUIIN 627, 640, SPED 661, BIOL 722

Degree Phase (9 credit hours)

- Take 6 credit hours: CUIIN 711; BIOL 712
- Select 3 credit hours from: BIOL 700-799; CUIIN 700-799

Master of Arts in Teaching - Business Education, MAT

College of Business and Economics

Graduate Coordinator: Lisa Gueldenzoph Snyder **Email:** Lguelden@ncat.edu Phone: 336-334-7657

Department Chair: Lisa Gueldenzoph Snyder **Email:** Lguelden@ncat.edu Phone: 336-334-7657

The Master of Arts in Teaching (MAT) in Business Education is designed for college graduates who have earned a bachelor's degree in a business discipline. Graduates of the program are licensed by the North Carolina Department of Public Instruction to teach business education courses in grades 7 to 12. In addition to pursuing careers in public education, graduates of the MAT in Business Education also have the opportunity to seek positions in the workplace as business trainers. The degree enables candidates to develop the knowledge, skills, and dispositions needed to become excellent instructors. All Teacher Education programs are accredited by the National Council for Accreditation of Teacher Education (NCATE) and approved by the North Carolina Department of Public Instruction. The Business Education program is accredited by AACSB International.

Teacher Education Licensure: Completing this master's degree and obtaining a teaching license are separate processes. Admission to this master's program does not guarantee admission to the Teacher Education Licensure program. To be recommended for licensure, candidates must first be formally admitted to the Teacher Education Licensure Program. Failure to complete the Teacher Education admission requirements during the first semester of enrollment may result in the student's inability to register for certain required courses. Applicants and current students should review licensure requirements at <http://www.ncat.edu/academics/schools-colleges1/soe/teacher-education/index.html> or visit the School of Education for guidance on specific requirements.

Additional Admission Requirements

- 24 credit hours of content-related course work with a grade of C or better
- Verification of criminal background
- Unconditional admission requires an undergraduate GPA of 2.8 or higher

Program Outcomes:

- **Teacher leadership.** Teacher leaders assume the roles and responsibilities of collaborative leaders in schools and communities. Teachers demonstrate leadership in their classrooms, schools, and professional organizations; they advocate for students and adhere to effective educational practices and policies; and they are role models for ethical leadership. Teacher leaders will know and be able to: (a) demonstrate effective ongoing communication, collaboration, and team-building among colleagues, (b) facilitate mentoring and coaching with novice teachers, (c) set goals and establish priorities while promoting educational initiatives that positively affect student learning, and (d) participate in professional learning communities.
- **Educational Environment.** Teacher leaders model leadership by establishing a positive and productive environment for a diverse population of students, their families, and the community. Teachers are knowledgeable about cultures and global issues and how they are contextualized locally. Teachers help colleagues develop effective strategies for students with special needs. They encourage positive, constructive relations among colleagues and students. Teacher leaders: (a) facilitate the development of inviting, respectful, supportive, inclusive, and flexible educational communities; (b) create collaborative partnerships with families, schools, and communities to promote a positive school culture; (c) facilitate and model caring and respectful treatment of individuals within the learning community; (d) demonstrate knowledge and understanding of diverse world cultures and global issues; (e) encourage high expectations for all students; and (f) collaboratively design and implement curriculum and instruction that is responsive to learner differences.

- **Content and Curriculum Expertise.** Teacher leaders have a deep knowledge of the subjects they teach and understanding of curriculum theory and development. They value collaboration and the interconnectedness of disciplines. They understand the importance of curriculum relevance in engaging students in content. Teacher leaders: (a) demonstrate in-depth knowledge of curriculum, instruction, and assessment; (b) model the integration of 21st century content and skills into educational practices; and (c) develop relevant, rigorous curriculum.
- **Student Learning.** Teacher leaders facilitate student learning through evidence-based practice informed by research. They understand and apply research in child and adolescent development, cognitive development, and general and specialized pedagogy. They encourage critical reading, writing, and thinking in the learning process. They foster instructional and evaluation methods that embrace variety and authenticity. They promote student reflection and self-assessment. They encourage colleagues and students to take on leadership roles and work in teams. Teacher leaders: (a) seek and use existing research to inform school practices; (b) design action research to investigate and improve student learning and school policies and practices; (c) model technology integration that supports student learning; and (d) critically analyze student and school performance data to determine needs and plan instruction that is rigorous, coherent, and substantiated within a theoretical and philosophical base.
- **Reflection. Continuous Improvement.** Teacher leaders contribute to systematic, critical analysis of learning in their classrooms and beyond. They are lifelong learners who model and support ongoing professional development. Teachers embrace critical thinking, problem solving, and innovation. Teacher leaders: (a) promote an educational culture that values reflective practice; (b) model the development of meaningful professional goals; and (c) model personal and professional reflection to extend student learning and school improvement.

Degree Requirements

Total Credit Hours: 30

Certificate Phase (21 credit hours)

- Core courses (9 credit hours): CUIN 618, 715, 785
- Take 12 credit hours: CUIN 627, 640, SPED 661, BUED 682

Degree Phase (9 credit hours)

- Take 3 credit hours: CUIN 711
- Select 6 credit hours from: BUED 600-799; CUIN 600-799

Master of Arts in Teaching - Chemistry Education, MAT

College of Science and Technology

Graduate Coordinator: Zerihun Assefa

Email: zassefa@ncat.edu

Phone: 336-285-2255

Department Chair: Zerihun Assefa

Email: zassefa@ncat.edu

Phone: 336-285-2255

Situated within the School of Education's conceptual framework of "Professional Educator: A Catalyst for Learning," the M.A.T in Chemistry Education program is designed for college graduates who have decided to enter the teaching profession, many of whom will already be lateral entry teachers, teachers changing fields and perspective candidates who are taking coursework before entering the classroom. It is another way of addressing the critical teacher shortage, since post baccalaureate students accepted into this program will have the academic credentials and maturity necessary to complete both introductory and advanced work in teacher education in a graduate level program. The Masters of Art in Teaching will enable prospective teachers, who bring content knowledge to the graduate degree, the opportunity to develop the knowledge, skills, and dispositions to become excellent teachers.

Teacher Education Licensure: Completing this master's degree and obtaining a teaching license are separate processes. Admission to this master's program does not guarantee admission to the Teacher Education Licensure program. To be recommended for licensure, candidates must first be formally admitted to the Teacher Education Licensure Program. Failure to complete the Teacher Education admission requirements during the first semester of enrollment may result in the student's inability to register for certain required courses. Applicants and current students should review licensure requirements at <http://www.ncat.edu/academics/schools-colleges1/soe/teacher-education/index.html> or visit the School of Education for guidance on specific requirements.

Additional Admission Requirements

- 24 credit hours of content-related course work with a grade of C or better
- Verification of criminal background
- Unconditional admission requires an undergraduate GPA of 2.8 or higher

Program Outcomes

- **SLO 1 Content Knowledge:** Candidates in the MAT Chemistry Secondary Education Program will illustrate their ability to align learning theories, chemistry content knowledge, pedagogical content knowledge, and the Common Core and North Carolina Essential Standards as indicated by passing scores on the Praxis II Secondary Chemistry Exam.
- **SLO 2 Communication:** During CUIIN 660 Clinical Practice in 21st Century Classroom course, candidates will communicate effectively orally and in writing with students from diverse backgrounds (grades 9-12) according to standards commonly practiced in the profession.
- **SLO 3 Critical Thinking:** In CUIIN 660, candidates will effectively develop and implement the Content Area Instructional Unit Work Sample (CAIUWS).

Degree Requirements

Total Credit Hours: 30

Certificate Phase (21 credit hours)

- Core courses (9 credit hours): CUIIN 618, 715, 785
- Take 12 credit hours: CUIIN 627, 640, SPED 661, CHEM 732

Degree Phase (9 credit hours)

- Take 3 credit hours from: CUIIN 711, CHEM 796
- Take 6 credit hours: CHEM 711, 722

Master of Arts in Teaching - Child Dev, Early Edu and Family Studies B-K, MAT

College of Agriculture and Environmental Sciences

Graduate Coordinator: Valerie Jarvis McMillan **Email:** vmcmilla@ncat.edu **Phone:** 336-285-4859

Department Chair: Jane Walker **Email:** walkerj@ncat.edu **Phone:** 336-285-3633

The Master of Arts in Teaching in Child Development, Early Education and Family Studies Birth–Kindergarten prepares students to 1) master the knowledge, skills and dispositions required for the Birth–Kindergarten license; 2) analyze theoretical perspectives and current research, to conduct research and to apply this knowledge toward reflective, evidence-based practice in teaching and working with families; and 3) assume diverse professional and leadership roles in a wide variety of educational and community settings. The Master of Arts in Teaching (MAT) program is accredited by the National Council for the Accreditation of Teacher Education (NCATE) and approved by the North Carolina Department of Public Instruction (NCDPI).

Teacher Education Licensure: Completing this master’s degree and obtaining a teaching license are separate processes. Admission to this master’s program does not guarantee admission to the Teacher Education Licensure program. To be recommended for licensure, candidates must first be formally admitted to the Teacher Education Licensure Program. Failure to complete the Teacher Education admission requirements during the first semester of enrollment may result in the student’s inability to register for certain required courses. Applicants and current students should review licensure requirements at <http://www.ncat.edu/academics/schools-colleges1/soe/teacher-education/index.html> or visit the School of Education for guidance on specific requirements.

Additional Admission Requirements

- 24 credit hours of content-related course work with a grade of C or better
- Verification of criminal background
- Unconditional admission requires an undergraduate GPA of 2.8 or higher

Program Outcomes:

- Upon completion of the master’s program, students will communicate clearly and effectively their knowledge of child development, early education and family studies
- Upon completion of the master’s program, student will be able to assess scholarly literature for contributions to issues in the child development, early education and family studies
- Upon completion of the master’s program, students will be able to design a research study using appropriate techniques
- Upon completion of the master’s program, students will have knowledge of theories and their application to practical global issues related to the discipline

Degree Requirements

Total Credit Hours: 30

Certificate Phase (21 credit hours)

- Core courses (9 credit hours): CUIN 618, 715, 785
- Take 9 credit hours: FCS 659, 700, 701
- Take 3 credits from: FCS 629, 639

Degree Phase (9 credit hours)

- Take 9 credit hours: FCS 704, 711, 713, 760

Master of Arts in Teaching - Elementary Education K-6, MAT

College of Education

Graduate Coordinator: Kimberly Erwin

Email: kderwin@ncat.edu **Phone:** 336-334-7848

Department Chair: Erika R. Williams

Email: ewilliam@ncat.edu **Phone:** (336) 334-7848

The mission of the Master of Arts in Teaching (MAT) in Elementary Education (K-6) degree program is to prepare highly-qualified classroom teachers for the K-6 classroom. Through courses in elementary-grades mathematics, social studies, language development, diagnostic and prescriptive reading, and assessment and evaluation, candidates in the Master of Arts in Teaching, Elementary Education program develop knowledge, skills, dispositions, and professional attitudes that empower them to become lifelong learners and exemplary educational leaders inside and outside K-6 learning contexts. The MAT program in Elementary Education is aligned with professional standards commensurate with the Interstate Teacher Assessment and Support Consortium (InTASC), the National Council for the Accreditation of Teacher Education (NCATE), the North Carolina Department of Public Instruction (NCDPI), and National Board Professional Teaching Standards (NBPTS). The Master of Arts in Teaching (MAT) program in Elementary Education is an accredited program by the National Council for the Accreditation of Teacher Education (NCATE) and by the North Carolina Department of Public Instruction (NCDPI).

Teacher Education Licensure: Completing this master's degree and obtaining a teaching license are separate processes. Admission to this master's program does not guarantee admission to the Teacher Education Licensure program. To be recommended for licensure, candidates must first be formally admitted to the Teacher Education Licensure Program. Failure to complete the Teacher Education admission requirements during the first semester of enrollment may result in the student's inability to register for certain required courses. Applicants and current students should review licensure requirements at <http://www.ncat.edu/academics/schools-colleges/soe/teacher-education/index.html> or visit the School of Education for guidance on specific requirements.

Additional Admission Requirements

- 24 credit hours of content-related course work with a grade of C or better
- Verification of criminal background
- Unconditional admission requires an undergraduate GPA of 2.8 or higher

Program Outcomes:

Candidates in the MAT Elementary Education program will: (1) demonstrate effective oral, written, and presentation skills appropriate for K-6 classrooms, (2) demonstrate effective knowledge, skills, and attitudes in diversity issues, learning theories, technological skills, and methods of instruction, (3) demonstrate the ability to implement developmentally-appropriate instruction aligned with the North Carolina Common Core and Essential Standards with K-6 students, and (4) demonstrate their ability to positively impact K-6 student learning through responsive instruction aligned with the North Carolina Common Core and Essential Standards, and (5) demonstrate their depth of content knowledge and breadth of content pedagogy for K-6 learners from diverse backgrounds.

Degree Requirements

Total Credit Hours: 30

Certificate Phase (21 credit hours)

- Core courses (9 credit hours): CUIN 618, 715, 785
- Take 12 credit hours: CUIN 612, 613, 620; ELED 612

Degree Phase (9 credit hours)

- Take 9 credit hours: CUIN 729; ELED 719, 729

Master of Arts in Teaching - English Education, MAT

College of Science and Technology

Graduate Coordinator: Pauline Uwakweh

Email: pauwakwe@ncat.edu

Phone: 336-285-2329

Department Chair: Elon Kulii

Email: ekulii@ncat.edu

Phone: 336-285-3516

The Master's programs in English offer students a wide range of skills and knowledge in the areas of African American Literature, English Education and Teaching. The MAT degree offers students seeking licensure through graduate studies the skills to teach in grades 9-12. The program has two phases: Phase I comprises course work, internship and Praxis II leading to A-licensure. Phase II includes a research component and qualifying coursework leading to advanced M-Licensure.

Teacher Education Licensure: Completing this master's degree and obtaining a teaching license are separate processes. Admission to this master's program does not guarantee admission to the Teacher Education Licensure program. To be recommended for licensure, candidates must first be formally admitted to the Teacher Education Licensure Program. Failure to complete the Teacher Education admission requirements during the first semester of enrollment may result in the student's inability to register for certain required courses. Applicants and current students should review licensure requirements at <http://www.ncat.edu/academics/schools-colleges/soe/teacher-education/index.html> or visit the School of Education for guidance on specific requirements.

Additional Admission Requirements

- 24 credit hours of content-related course work with a grade of C or better
- Verification of criminal background
- Unconditional admission requires an undergraduate GPA of 2.8 or higher

Program Outcomes:

The Master of Arts program in English is structured to include knowledge of literature appropriate to the discipline and ensuring ongoing student engagement in research and/or appropriate professional practice and training experiences.

Degree Requirements

Total Credit Hours: 30

Certificate Phase (21 credit hours)

- Core courses (9 credit hours): CUI 618, 715, 785
- Take 9 credit hours: CUI 627, 640; ENGL 627
- Take 3 credits from: SPED 660, 661

Degree Phase (9 credit hours)

- Take 6 credit hours: ENGL 753, 755
- Take 3 credit hours from: ENGL 700-799

Master of Arts in Teaching - Family and Consumer Sciences Education, MAT

College of Agriculture and Environmental Science

Graduate Coordinator: Valerie Jarvis McMillan **Email:** vmcmilla@ncat.edu **Phone:** 336-285-4859

Department Chair: Jane Walker **Email:** walkerj@ncat.edu **Phone:** 336-285-3633

The Master of Arts in Teaching in Family and Consumer Sciences prepares students to 1) master the knowledge, skills and dispositions required for the Family and Consumer Sciences license; 2) analyze theoretical perspectives and current research, to conduct research and to apply this knowledge toward reflective, evidence-based practice in teaching and working with families; and 3) assume diverse professional and leadership roles in a wide variety of educational and community settings. The program is accredited by the National Council for Accreditation of Teacher Education (NCATE) and approved by the North Carolina Department of Public Instruction.

Teacher Education Licensure: Completing this master's degree and obtaining a teaching license are separate processes. Admission to this master's program does not guarantee admission to the Teacher Education Licensure program. To be recommended for licensure, candidates must first be formally admitted to the Teacher Education Licensure Program. Failure to complete the Teacher Education admission requirements during the first semester of enrollment may result in the student's inability to register for certain required courses. Applicants and current students should review licensure requirements at <http://www.ncat.edu/academics/schools-colleges1/soe/teacher-education/index.html> or visit the School of Education for guidance on specific requirements.

Additional Admission Requirements

- 24 credit hours of content-related course work with a grade of C or better
- Verification of criminal background
- Unconditional admission requires an undergraduate GPA of 2.8 or higher

Program Outcomes

1. Upon completion of the master's program, students will communicate clearly and effectively their knowledge of family and consumer sciences
2. Upon completion of the master's program, student will be able to assess scholarly literature for contributions to issues in the field of family and consumer sciences
3. Upon completion of the master's program, students will be able to design a research study using appropriate techniques
4. Upon completion of the master's program, students will have knowledge of theories and their application to practical global issues related to the discipline.

Degree Requirements

Total Credit Hours: 30

Certificate Phase (21 credit hours)

- Core courses (9 credit hours): CUIN 618, 715, 785
- Take 9 credit hours: FCS 681, 700, 703
- Take 3 credits from: FCS 682, 683, 701, 714, 734

Degree Phase (9 credit hours)

- Take 9 credit hours: FCS 702, 704, 711, 760

Master of Arts in Teaching - Health and Physical Education, MAT

College of Education

Graduate Coordinator: Teresa Dail **Email:** tkdail@ncat.edu **Phone:** 336-285-3545

Department Chair: Jerono Rotich **Email:** jprotich@ncat.edu **Phone:** 336-285-3552

The MAT program in Physical Education is aligned with professional standards commensurate with the Interstate Teacher Assessment and Support Consortium (InTASC), the National Council for the Accreditation of Teacher Education (NCATE), the North Carolina Department of Public Instruction (NCDPI), and National Board Professional Teaching Standards (NBPTS). The Master of Arts in Teaching (MAT) program in Physical Education is accredited by the National Council for the Accreditation of Teacher Education (NCATE) and by the North Carolina Department of Public Instruction (NCDPI).

Teacher Education Licensure: Completing this master's degree and obtaining a teaching license are separate processes. Admission to this master's program does not guarantee admission to the Teacher Education Licensure program. To be recommended for licensure, candidates must first be formally admitted to the Teacher Education Licensure Program. Failure to complete the Teacher Education admission requirements during the first semester of enrollment may result in the student's inability to register for certain required courses. Applicants and current students should review licensure requirements at <http://www.ncat.edu/academics/schools-colleges/soe/teacher-education/index.html> or visit the School of Education for guidance on specific requirements.

Additional Admission Requirements

- 24 credit hours of content-related course work with a grade of C or better
- Verification of criminal background
- Unconditional admission requires an undergraduate GPA of 2.8 or higher

Program Outcomes:

Candidates in the MAT Physical Education and Health program will: (1) demonstrate effective oral, written, and presentation skills appropriate for K-12 classrooms, (2) demonstrate effective knowledge, skills, and attitudes in diversity issues, learning theories, technological skills, and methods of instruction, (3) demonstrate the ability to implement developmentally-appropriate instruction aligned with the North Carolina Common Core and Essential Standards with K-12 students; and (4) demonstrate their depth of content knowledge and breadth of content pedagogy for K-12 learners from diverse backgrounds.

Degree Requirements

Total Credit Hours: 30

Certificate Phase (21 credit hours)

- Core courses (9 credit hours): CUIN 618, 715, 785
- Take 12 credit hours: HPED 610, 612, 613, 619

Degree Phase (9 credit hours)

- Take 9 credit hours: HPED 750, 751, 760

Master of Arts in Teaching - History Education, MAT

College of Arts Humanities and Social Sciences

Graduate Coordinator: Dwana Waugh

Email: dlwaugh@ncat.edu

Phone: 285-2318

Department Chair: Arwin Smallwood

Email: asmallwo@ncat.edu

Phone: 285-2048

The Master of Arts in Teaching - History Education (M.A.T.) program builds upon the knowledge and skills already mastered by teachers at the undergraduate level and is intended to continue the History Department and School of Education's commitment to develop professional teachers for secondary schools in North Carolina. This program is designed to meet all requirements for licensure and will provide a coherent and complete curriculum that meets the highest standards. The M.A.T. is planned for the college graduate of the respective areas who seeks licensure and graduate studies in teaching grades K-12. The design of the M.A.T. program is two-tiered. The first tier includes all of the course work needed for "A" licensure, including an internship requirement and passing the appropriate examinations of Praxis II. The second tier includes a research requirement and other courses that complete requirements for the advanced master's degree and qualifies the candidate for the advanced "M" licensure.

Teacher Education Licensure: Completing this master's degree and obtaining a teaching license are separate processes. Admission to this master's program does not guarantee admission to the Teacher Education Licensure program. To be recommended for licensure, candidates must first be formally admitted to the Teacher Education Licensure Program. Failure to complete the Teacher Education admission requirements during the first semester of enrollment may result in the student's inability to register for certain required courses. Applicants and current students should review licensure requirements at <http://www.ncat.edu/academics/schools-colleges1/soe/teacher-education/index.html> or visit the School of Education for guidance on specific requirements.

Additional Admission Requirements

- 24 credit hours of content-related course work with a grade of C or better
- Verification of criminal background
- Unconditional admission requires an undergraduate GPA of 2.8 or higher

Program Outcomes:

- Students completing the MAT in History Education shall be able to: apply advanced knowledge of pedagogical and thematic subject matter standards of the social studies curriculum to teach middle and high school social studies effectively in a culturally diverse setting; demonstrate advanced knowledge of major historiographical schools of thought and significant periods of history; demonstrate competencies essential for the teaching of history and social studies in secondary schools.
- Students completing the MAT in History shall be able to effectively communicate their knowledge of social studies and the educational concepts and theories necessary to teach middle and high school social studies in a culturally diverse setting.
- Students completing the MAT in History shall be able to: demonstrate an awareness of the contributions of historical and social research to policy analysis and decision-making; demonstrate an understanding of how students differ in their approaches to learning and be able to create teaching and learning strategies that address the needs of diverse learners; demonstrate an understanding of the impact of various groups, institutions, and nations on global history and development; demonstrate an understanding of how to select appropriate objectives consistent with state and local curriculum guidelines, the learning needs of students, and the standards established by the National Council of Social Studies and Interstate New Teacher Assessment and Support Consortium (INTASC).

- Students completing the MAT in History shall be able to: demonstrate instructional leadership as an individual and collaboratively; show improvement in performance and practice through self-evaluation, reflection, and applied research; secure employment in the field of social studies; gain admission to a variety of doctoral programs.

Degree Requirements

Total Credit Hours: 30

Certificate Phase (21 credit hours)

- Core courses (9 credit hours): CUIN 618, 715, 785
- Take 12 credit hours: CUIN 627, 640; HIST 735; SPED 661

Degree Phase (9 credit hours)

- Take 9 credit hours: HIST 714, 715, 740

Master of Arts in Teaching - Mathematics Education, MAT

College of Science and Technology

Graduate Coordinator: Bampia Bangura **Email:** babangura@ncat.edu **Phone:** 336-285-2067

Department Chair: Guoqing Tang **Email:** tang@ncat.edu **Phone:** 336-285-2033

The mission of the MAT in Mathematics Education at North Carolina A&T State University is to provide students with educational experiences in an environment that allows them to have a sense of belonging and purpose. These educational experiences are designed to produce competent teachers who will serve their students, their schools and their communities in promoting the learning and teaching of mathematics.

Teacher Education Licensure: Completing this master's degree and obtaining a teaching license are separate processes. Admission to this master's program does not guarantee admission to the Teacher Education Licensure program. To be recommended for licensure, candidates must first be formally admitted to the Teacher Education Licensure Program. Failure to complete the Teacher Education admission requirements during the first semester of enrollment may result in the student's inability to register for certain required courses. Applicants and current students should review licensure requirements at <http://www.ncat.edu/academics/schools-colleges/soe/teacher-education/index.html> or visit the School of Education for guidance on specific requirements.

Additional Admission Requirements

- 24 credit hours of content-related course work with a grade of C or better
- Verification of criminal background
- Unconditional admission requires an undergraduate GPA of 2.8 or higher

Program Outcomes:

- Students will develop the ability to apply their knowledge of mathematics and educational concepts and theories to teach middle and high school mathematics effectively in a culturally diverse setting.
- Students will communicate effectively and with confidence their knowledge of mathematics and educational concepts and theories to teach middle and high school mathematics effectively in a culturally diverse setting.
- Students will develop the ability to use mathematical reasoning and analysis to acquire a comprehensive understanding of Secondary Education Mathematics. Students will be able to apply analytical reasoning skills in decision making as well as mathematics based problem solving skills in secondary school mathematics teaching.
- Students will develop the ability to apply educational technology tools or computer programming techniques to construct computer programs or educational media to solve mathematical application problems appropriate for secondary school teachers.

Degree Requirements

Total Credit Hours: 30

Certificate Phase (21 credit hours)

- Core courses (9 credit hours): CUIN 618, 715, 785
- Take 12 credit hours: CUIN 627, 640; MATH 604, 608

Degree Phase (9 credit hours)

- Take 9 credit hours: MATH 709, 721, 796

Master of Arts in Teaching - Special Education General Curriculum K-12, MAT

College of Education

Graduate Coordinator: Dawn Waegerle

Email: waegerle@ncat.edu **Phone:** 336-334-7848

Department Chair: Erika R. Williams

Email: ewilliam@ncat.edu **Phone:** (336) 334-7848

The mission of the Master of Arts in Teaching (MAT) in Special Education: General Curriculum (K-12) degree program is to prepare highly-qualified classroom teacher leaders who serve students with mild/moderate disabilities in diverse settings. Through courses which focus on characteristics of learners with special needs, evidence based special education methods used in inclusive and other settings, diagnostic and prescriptive reading and math, assessment and IEP development, classroom and behavior management, educational and assistive technology and other content, candidates in the Master of Arts in Teaching: Special Education program develop knowledge, skills, dispositions, and professional attitudes that empower them to become lifelong learners and exemplary educational leaders inside and outside K-12 learning contexts. The MAT program in Special Education is aligned with professional standards commensurate with the North Carolina Department of Public Instruction (NCDPI), The Council for Exceptional Children, and the National Council for the Accreditation of Teacher Education (NCATE). Upon program completion, students who meet all programmatic requirements are eligible for the North Carolina "M" teaching license in Special Education: General Curriculum. The Master of Arts in Teaching (MAT) program in Special Education is an accredited program by the National Council for the Accreditation of Teacher Education (NCATE) and approved by the North Carolina Department of Public Instruction (NCDPI).

Teacher Education Licensure: Completing this master's degree and obtaining a teaching license are separate processes. Admission to this master's program does not guarantee admission to the Teacher Education Licensure program. To be recommended for licensure, candidates must first be formally admitted to the Teacher Education Licensure Program. Failure to complete the Teacher Education admission requirements during the first semester of enrollment may result in the student's inability register for certain required courses. Applicants and current students should review licensure requirements at <http://www.ncat.edu/academics/schools-colleges1/soe/teacher-education/index.html> or visit the School of Education for guidance on specific requirements.

Additional Admission Requirements

- 24 credit hours of content-related course work with a grade of C or better
- Verification of criminal background
- Unconditional admission requires an undergraduate GPA of 2.8 or higher

Program Outcomes:

Candidates in the MAT Special Education program will: (1) demonstrate effective oral, written, and presentation skills appropriate for teachers working with students with exceptionalities in K-12 classrooms, (2) demonstrate effective, research-based instruction which impacts student learning, (3) demonstrate the ability to implement research-based appropriate instruction aligned with the Common Core for K-12 students with exceptionalities from diverse backgrounds, and (4) demonstrate their depth of content knowledge and breadth of content pedagogy for K-12 students with special needs.

Degree Requirements

Total Credit Hours: 30

Certificate Phase (21 credit hours)

- Core courses (9 credit hours): CUIN 618, 715, 785
- Take 12 credit hours: ELED 612; SPED 639, 748, 764

Degree Phase (9 credit hours)

- Take 9 credit hours: SPED 760, 763, 772

Master of Arts in Teaching - Technology Education, MAT

College of Science and Technology

Graduate Coordinator: Vincent Childress **Email:** childres@ncat.edu **Phone:** 336-334-7550

Department Chair: Vincent Childress **Email:** childres@ncat.edu **Phone:** 336-334-7550

The Master of Art in Teaching for teachers of Technology Education (Technology, Engineering, and Design) and Trade and Industrial Education provides teachers with an initial license in Phase I of the degree and an advanced license upon completion of the degree. This online program complies with INTASC, NCATE/CAEP, and the North Carolina Department of Public Instruction, and the standards of achievement for 21st Century learners. This program will prepare graduate students to provide instructional leadership and to capably deliver technology education to the public schools.

Teacher Education Licensure: Completing this master's degree and obtaining a teaching license are separate processes. Admission to this master's program does not guarantee admission to the Teacher Education Licensure program. To be recommended for licensure, candidates must first be formally admitted to the Teacher Education Licensure Program. Failure to complete the Teacher Education admission requirements during the first semester of enrollment may result in the student's inability to register for certain required courses. Applicants and current students should review licensure requirements at <http://www.ncat.edu/academics/schools-colleges/soe/teacher-education/index.html> or visit the School of Education for guidance on specific requirements.

Additional Admission Requirements

- 24 credit hours of content-related course work with a grade of C or better
- Verification of criminal background
- Unconditional admission requires an undergraduate GPA of 2.8 or higher

Program Outcomes:

- Teachers know the content they teach; both breadth and depth of knowledge.
- Teachers are leaders.
- Teachers facilitate learning for their students and enhance learning with instructional technology.
- Teachers create a respectful environment for students from diverse backgrounds.
- Technology and trade & industrial education teachers manage their laboratories and instructional programs to create safe learning environments.
- Teachers improve their programs by reflecting on student assessment data and program assessment data.
- Technology and trade & industrial education teachers are technologically literate in general.
- Teachers create and lead learning communities.
- Teachers are reflective researchers.

Degree Requirements

Total Credit Hours: 30

Certificate Phase (21 credit hours)

- Core courses (9 credit hours): CUIN 618, 715, 785
- Take 12 credit hours: CUIN 627, 640; TECH 708; SPED 661

Degree Phase (9 credit hours)

- Take 9 credit hours: TECH 764, 767, 768

Mechanical Engineering, MS

College of Engineering

Graduate Coordinator: Dhananjay Kumar

Email: dkumar@ncat.edu

Phone: 336-285-3227

Department Chair: Frederick Ferguson

Email: fferguson@ncat.edu

Phone: 336-285-2135

The Mechanical Engineering master's program provides advanced level study in distinct areas of specialization such as mechanics and materials, energy and thermal/fluid systems, design and manufacturing, and aerospace. The program prepares the graduate student for doctoral level studies or for advanced mechanical engineering practice in industry, consulting or government service.

Additional Admission Requirements

- Unconditional admission requires an engineering undergraduate degree from an ABET accredited mechanical engineering program

Program Outcomes

- Students will develop advanced critical thinking skills by solving complex and challenging problems in mechanical engineering, mathematics and the physical sciences
- Students will communicate effectively by conveying their ideas, both orally and in written form, in accordance with acceptable published standards
- Students will demonstrate their ability to perform research by generating a thesis of an original idea and publishing technical papers under the guidance of an academic advisor
- Graduates will engage in professional activities by attending conferences, presenting papers and serving various roles in professional organizations

Degree Requirements

Total credit hours: 30

- Core courses (9 credits): MEEN 601, 643, 716

Thesis option

- MATH electives (3 credits): Take 3 credit hours from MATH 650, 651, 652
- MEEN electives (9 credits): Take 9 credits of additional MEEN 600-899 courses with approval of advisor
- Technical electives (3 credits): Take additional 3 credit hours with approval of advisor
- Thesis (MEEN 797: 6 credits)
- Pass thesis defense

Project option

- MATH electives (3 credits): Take 3 credit hours from MATH 650, 651, 652
- MEEN electives (9 credits): Take 9 credits of additional MEEN 600-899 courses with approval of advisor
- Technical electives (6 credits): Take additional 6 credit hours with approval of advisor
- Project (MEEN 796: 3 credits)

Course option

- MATH electives (3 credits): Take 3 credit hours from MATH 650, 651, 652
- MEEN electives (9 credits): Take 9 credits of additional MEEN 600-899 courses with approval of advisor
- Technical electives (9 credits): Take additional 9 credit hours with approval of advisor
- Pass comprehensive exam

Mechanical Engineering – Systems Engineering, MS

College of Engineering

Graduate Coordinator: Dhananjay Kumar

Email: dkumar@ncat.edu

Phone: 336-285-3227

Department Chair: Frederick Ferguson

Email: fferguson@ncat.edu

Phone: 336-285-2135

The Mechanical Engineering master's program provides advanced level study in distinct areas of specialization such as mechanics and materials, energy and thermal/fluid systems, design and manufacturing, and aerospace. The program prepares the graduate student for doctoral level studies or for advanced mechanical engineering practice in industry, consulting or government service.

Additional Admission Requirements

- Unconditional admission requires an engineering undergraduate degree from an ABET accredited mechanical engineering program

Program Outcomes

- Students will develop advanced critical thinking skills by solving complex and challenging problems in mechanical engineering, mathematics and the physical sciences
- Students will communicate effectively by conveying their ideas, both orally and in written form, in accordance with acceptable published standards
- Students will demonstrate their ability to perform research by generating a thesis of an original idea and publishing technical papers under the guidance of an academic advisor
- Graduates will engage in professional activities by attending conferences, presenting papers and serving various roles in professional organizations

Degree Requirements

Total credit hours: 30

- Core courses (9 credits): MEEN 601, 643, 716
- Systems Engineering Core (9 credit hours): SYEN 605, 710, 715
- Systems Engineering Electives: Take 9 credit hours from: MEEN 614, 619, 652, 669, 680, 815
- MATH electives (3 credits): Take 3 credit hours from MATH 650, 651, 652

Mechanical Engineering, PhD

College of Engineering

Graduate Coordinator: Dhananjay Kumar

Email: dkumar@ncat.edu

Phone: 336-285-3227

Department Chair: Frederick Ferguson

Email: fferguson@ncat.edu

Phone: 336-285-2135

The Ph.D. degree in Mechanical Engineering provides both advanced instruction and independent research opportunities for students. Graduates are typically employed in research environments in government laboratories and industries, and as university faculty. The Ph.D. degree program is highly individualistic in nature, and the student is expected to make a significant contribution to the reservoir of human knowledge by investigating a significant topic within the domain of mechanical engineering.

Additional Admission Requirements

- Bachelor of Science degree in Mechanical Engineering with a minimum cumulative GPA of 3.5 or Master of Science degree in Mechanical Engineering or a closely related engineering discipline with a minimum GPA of 3.3
- GRE score

Program Outcomes

- Graduates of the Ph.D. program will apply their critical thinking skills to invent, analyze, and model complex engineering systems and make novel contributions to the discipline.
- Graduates of the Ph.D. program will demonstrate effective communication skills through project and dissertation work and conference presentations.
- Graduates of the Ph.D. program will perform research or undertake advanced projects in an area of mechanical engineering such as mechanical systems and materials, energy and thermal-fluid sciences, and aerospace and make novel contributions in their respective areas of research.
- Graduates of the Ph.D. program will be active and effective leaders in their professional societies.

Degree Requirements

Total credit hours: 62 (post baccalaureate)

- Core courses (9 credits): MEEN 601, 643, 716
- MATH electives (3 credits): Take 3 credit hours from MATH 650, 651, 652
- MEEN electives (24 credits): Take 24 credits of additional MEEN 600-899 courses with approval of advisor
- Technical electives (6 credits): Take additional 6 credit hours with approval of advisor
- Seminar (2 credits): Take MEEN 992 two times in two semesters
- Dissertation (18 credits): MEEN 997
- Pass qualifying exam, preliminary exam, dissertation defense

Dissertation Research:

A student may not register for dissertation credits before passing Qualifying Examination. No more than 18 dissertation credits are counted toward the total credit hours requirement for the degree.

Qualifying Examination:

The Qualifying Examination is given to assess the student's competence in a broad range of relevant subject areas. Only students with unconditional status and in good academic standing may take the Qualifying Examination. A student who wants to retake the Qualifying Examination must apply to retake the Qualifying Examination by the posted deadline. No student is permitted to take the Qualifying Examination more than twice. A student not recommended for re-examination or who fails the exam on a second attempt may be dismissed from the doctoral program.

Preliminary Oral Examination:

The Preliminary Oral Examination is conducted by the student's dissertation committee and is a defense of the student's dissertation proposal. Passing this exam satisfies requirements for Ph.D. Candidacy. Failure on the examination may result in dismissal from the doctoral program. The student's Advisory Committee may permit one re-examination. At least one full semester must elapse before the re-examination. Failure on the second attempt will result in dismissal from the doctoral program.

Admission to Candidacy

Student will be admitted to candidacy upon successful completion of the Qualifying Exam and the Preliminary oral Exam.

Final Oral Examination:

The Final Oral Examination is conducted by the student's dissertation committee. This examination is the final dissertation defense presentation that is scheduled after a dissertation is completed. The examination may be held no earlier than one semester (or four months) after admission to candidacy. Failure on the examination may result in dismissal from the doctoral program. The student's Advisory Committee may permit one re-examination. At least one full semester must elapse before the re-examination. Failure on the second attempt will result in dismissal from the doctoral program.

Submission of Dissertation:

Upon passing the Ph.D. Final Oral Examination, the Ph.D. student must have the dissertation approved by each member of the student's dissertation committee. The approved dissertation must be submitted to The Graduate College by the deadline given in the academic calendar, and must conform to the Graduate College's guidelines for theses and dissertations.

Mental Health Counseling – Clinical, MS

College of Education

Graduate Coordinator: Patricia Bethea-Whitfield **Email:** betheap@ncat.edu **Phone:** (336) 285-4384

Department Chair: Caroline Booth **Email:** csbooth@ncat.edu **Phone:** (336) 285-4386

The Mental Health Counseling - Clinical program is a generalist program that is nationally accredited by the Council on the Accreditation of Counseling and Related Educational Programs (CACREP). This designation indicates curricular experiences encompassing each of the eight core areas of professional counseling including Professional Identity, Social and Cultural Diversity, Human Growth and Development, Career Development, Helping Relationships, Group Work, Assessment, and Research and Program Evaluation. Other required coursework includes clinical assessment and substance abuse. This degree prepares graduates to work in a variety of capacities such as marriage and family counseling, substance abuse counseling, clinical mental health counseling, college counseling, non-profit work, business settings, and many other areas. The U.S. Department of Labor projects that counseling is growing faster than average with some areas of clinical mental health counseling seeing growth rates up to 34% by 2016.

Additional Admission Requirements

- Statement of purpose: Describe career goals, research interests and a list of publications, professional and volunteer experience relevant to intended program of study, academic honors and organizations.
- Three professional letters of recommendation from persons who know the applicant in either an academic or supervisory capacity. Letters from family members, acquaintances, and friends are not acceptable
- A current resume or curriculum vita
- Interview: After initial review of all applications, the applicants with greatest potential are also expected to participate in a pre-admission interview with the Counseling faculty. Pre-admission interviews can include: (a) individual interviews, (b) group interaction with observation, and (c) on-site writing sample.

Program Outcomes:

- **Critical Thinking:** Students will develop skills and attitudes of effective thinking that employ the use of thoughtful reflection and logical inquiry to draw evidence-based conclusions as they relate to community counseling.
- **Oral Communication Skills:** Students will demonstrate proficiency in communicating in individual dyads and small and large group settings and in appropriate use of grammar to communicate counseling findings, while avoiding sexist language, doublespeak and clichés. Evaluation occurs during the benchmarking process. Students must receive a satisfactory rating from the majority of faculty to earn a satisfactory rating. Faculty will evaluate 100% of the student population.
- **Written Communication:** Students will demonstrate proficiency in academic and scientific writing, which includes avoiding digressions, consistent tenses, using the active voice and citing sources as well as findings, professional documentation, and report writing: with emphasis on APA publishing guidelines.
- **Cultural Self-Awareness and Sensitivity:** Students will demonstrate awareness of self, including knowledge of macro, micro, and meso ecological systems.
- **Cultural Competence:** Students will demonstrate an understanding of the cultural context of relationships, issues, and trends in a multicultural society.
- **Ethical Practice:** Students will demonstrate understanding and application of relevant professional ethical standards.
- **Professionalism:** Students will demonstrate professional maturity, integrity, and discipline consistent with professional standards of practice.

- **Research and Design:** Graduate community counseling students will demonstrate proficiency in designing quantitative, qualitative, single case designs, action, and outcome based research, as well as co-occurring and support software packages (e.g., SPSS). Students will understand ethics surrounding Human Subjects Social and Behavioral Science research procedures and Responsible Conduct in Research.
- **Research Evaluation:** Students will demonstrate proficiency in evaluating empirical and non-empirical research. Students will be able to review the professional literature and glean from the review relevant information for both research and practice. Students will be able evaluate research and its application to field experiences. Students will develop a research paper that reflects their knowledge of this content. The specifics of the research paper along with the grading rubric are presented in the achievement summary.
- **Statistics:** Students will demonstrate proficiency in basic statistics methods including scales of measurement, measures of central tendency, indices of variability, shapes and type of distributions, correlations, reliability and validity. Students will apply supportive software packages (e.g., MS Excel, SPSS).
- **Technological Competence:** Students will demonstrate proficiency in implementing best technology practices.

Degree Requirements:

Total credit hours: 60

- Core courses (18 credits): COUN 702, 713, 736, 740, 750, 770
- Practicum (COUN 784: 3 credits)
- Internship I (COUN 785: 3 credits)
- Internship II (COUN 786: 3 credits)
- Pass comprehensive exam
- Take 18 credits: COUN 707, 758, 759, 760, 763, 766
- Electives: Select 15 credit hours with approval of advisor

Practicum and Internships

Internships COUN 785 and 786 involve supervised professional experiences in settings appropriate to the student's vocational objectives. The internships will provide practical work in the student's area of specialization. Internships include 600 hours of field experience. Students must complete a minimum of 240 hours of direct services with clients. Each week, students receive one hour of individual supervision from their site supervisors and one and one-half hours group supervision from their university supervisors during seminar. Students in all field experience placements are required to create program-appropriate audio recordings and/or participate in live supervision of their interactions with clients for review by their University Supervisor

Double major (Mental Health Counseling – Clinical and Mental Health Counseling – Rehabilitation)

Regulations on pursuing double majors are presented elsewhere in the catalog and must be followed. The student will be required to complete requirements of both programs. The programs require the following unique (minimum 18 credit hour requirements):

Mental Health Counseling – Clinical:

COUN 707, 758, 759, 760, 763, 766, 784, 785, 786

Mental Health Counseling – Rehabilitation:

COUN 708, 709, 710, 731, 743, 764, 775, 784, 785, 786

Double major (Mental Health Counseling – Clinical and School Counseling)

Regulations on pursuing double majors are presented elsewhere in the catalog and must be followed. The student will be required to complete requirements of both programs. The programs require the following unique (minimum 18 credit hour requirements):

Mental Health Counseling – Clinical:
COUN 707, 758, 759, 784, 785, 786

School Counseling:
COUN 704, 710, 712, 714, 717, 784, 785, 786

Program Specific Academic Policies

Endorsement

The Department stipulates endorsement for employment or credentialing only in the program area in which a student received training.

Program Academic Eligibility

A student will be required to maintain semester GPA of at least 3.0 at the end of every semester irrespective of total attempted hours otherwise the student will be placed on probation for one semester. If the semester GPA and/or the cumulative GPA at the end of the probationary semester remains less than 3.0, the student will be dismissed.

Program Code of Conduct and Ethical Standards of Practice

As pre-professional counselors, graduate students abide by the code of ethics and standards of practice as described in the *Ethical Standards of the American Counseling Association (ACA)*, the *Commission on Rehabilitation Counselor Certification (CRCC)*, *The American Psychological Association*, the *Student Handbook*, the *Graduate Catalog*, and *Department of Human Development and Services Ethical Conduct Policy*.

Consequences of violation of the codes of conduct or ethical standards of practice include but are not limited to one or more of the following:

- Dismissal from the program
- Removal from the course or the field placement and a grade of “F” or “U”
- Referral to authorized campus authorities for further discipline.

Program Academic Progression and Retention Standards

The academic progression and retention standards for counselor education programs are in keeping with Council for the Accreditation of Counseling and Related Educational Programs (CACREP) standards, along with the standards set forth by the Council on Rehabilitation Education (CORE), the American Rehabilitation Counseling Association (ARCA), *Ethical Standards of the American Counseling Association (ACA)*, the *Commission on Rehabilitation Counselor Certification (CRCC)*, *The American Psychological Association*, the *Student Handbook*, the *Graduate Catalog*, and *Department of Human Development and Services Ethical Conduct Policy*.

The Benchmarking Review Process

Once each academic semester a benchmarking review of all enrolled students is conducted. The benchmarking committee is comprised of all full-time tenured and tenure-track counseling faculty and is chaired by a faculty member. Adjunct faculty members are also invited to attend the benchmarking review.

Reviews are conducted using the Benchmarking Assessment Rubric which focuses on academic performance, ethical behavior, and professional disposition. Each student will be notified in writing by

the Department Chairperson regarding the outcome of the benchmarking review and a copy will be placed in the student's file. Students who receive an unsatisfactory evaluation will be placed on probation, provided with a remediation plan and given one semester to implement the remediation plan in order to improve their performance to a satisfactory level. A subsequent unsatisfactory evaluation after the probationary period will result in dismissal from the program.

Mental Health Counseling – Rehabilitation, MS

College of Education

Graduate Coordinator: Quintin Boston

Email: qboston@ncat.edu

Phone: (336) 285-4396

Department Chair: Caroline Booth

Email: csbooth@ncat.edu

Phone: (336) 285-4386

The Mental Health Counseling - Rehabilitation program is accredited by the Council on Rehabilitation Education (CORE) and is designed to prepare culturally competent counselors who specialize in working with persons with physical, developmental, cognitive, psychological, and neurological disabilities and/or illnesses. Rehabilitation Counseling students are equipped with knowledge, skills, and experience to empower persons with disabilities through the counseling process. Students are further equipped with unique competencies to provide effective rehabilitation counseling services within a cultural context. Students are currently supported on RSA grants in the areas of Vocational Evaluation and Work Adjustment, Rehabilitation Psychology and Behavioral Medicine, and also Behavioral Addiction

Additional Admission Requirements

- Statement of purpose: Describe career goals, research interests and a list of publications, professional and volunteer experience relevant to intended program of study, academic honors and organizations.
- Three professional letters of recommendation from persons who know the applicant in either an academic or supervisory capacity. Letters from family members, acquaintances, and friends are not acceptable
- A current resume or curriculum vita
- Interview: After initial review of all applications, the applicants with greatest potential are also expected to participate in a pre-admission interview with the Counseling faculty. Pre-admission interviews can include: (a) individual interviews, (b) group interaction with observation, and (c) on-site writing sample.

Program Outcomes:

- Critical Thinking: Students will develop skills and attitudes of effective thinking that employ the use of thoughtful reflection and logical inquiry to draw evidence-based conclusions as they relate to community counseling.
- Oral Communication Skills: Students will demonstrate proficiency in communicating in individual dyads and small and large group settings and in appropriate use of grammar to communicate counseling findings, while avoiding sexist language, doublespeak and clichés. Evaluation occurs during the benchmarking process. Students must receive a satisfactory rating from the majority of faculty to earn a satisfactory rating. Faculty will evaluate 100% of the student population.
- Written Communication: Students will demonstrate proficiency in academic and scientific writing, which includes avoiding digressions, consistent tenses, using the active voice and citing sources as well as findings, professional documentation, and report writing: with emphasis on APA publishing guidelines.
- Cultural Self-Awareness and Sensitivity: Students will demonstrate awareness of self including knowledge of macro, micro, and meso ecological systems.
- Cultural Competence: Students will demonstrate an understanding of the cultural context of relationships, issues, and trends in a multicultural society.
- Ethical Practice: Students will demonstrate understanding and application of relevant professional ethical standards.
- Professionalism: Students will demonstrate professional maturity, integrity, and discipline consistent with professional standards of practice.
- Research and Design: Graduate community counseling students will demonstrate proficiency in designing quantitative, qualitative, single case designs, action, and outcome based research, as well as

co-occurring and support software packages (e.g., SPSS). Students will understand ethics surrounding Human Subjects Social and Behavioral Science research procedures and Responsible Conduct in Research.

- **Research Evaluation:** Students will demonstrate proficiency in evaluating empirical and non-empirical research. Students will be able to review the professional literature and glean from the review relevant information for both research and practice. Students will be able evaluate research and its application to field experiences. Students will develop a research paper that reflects their knowledge of this content. The specifics of the research paper along with the grading rubric are presented in the achievement summary.
- **Statistics:** Students will demonstrate proficiency in basic statistics methods including scales of measurement, measures of central tendency, indices of variability, shapes and type of distributions, correlations, reliability and validity. Students will apply supportive software packages (e.g., MS Excel, SPSS).
- **Technological Competence:** Students will demonstrate proficiency in implementing best technology practices.

Degree Requirements:

- Core courses (18 credits): COUN 702, 713, 736, 740, 750, 770
- Practicum (COUN 784: 3 credits)
- Internship I (COUN 785: 3 credits)
- Internship II (COUN 786: 3 credits)
- Pass comprehensive exam
- Take 21 credits: COUN 708, 709, 710, 731, 743, 764, 775
- Electives: Select 12 credit hours with approval of advisor

Practicum and Internships

Internships COUN 785 and 786 involve supervised professional experiences in settings appropriate to the student's vocational objectives. The internships will provide practical work in the student's area of specialization. Internships include 600 hours of field experience. Students must complete a minimum of 240 hours of direct services with clients. Each week, students receive one hour of individual supervision from their site supervisors and one and one-half hours group supervision from their university supervisors during seminar. Students in all field experience placements are required to create program-appropriate audio recordings and/or participate in live supervision of their interactions with clients for review by their University Supervisor

Double major (Mental Health Counseling – Rehabilitation and Mental Health Counseling – Clinical)

Regulations on pursuing double majors are presented elsewhere in the catalog and must be followed. The student will be required to complete requirements of both programs. The programs require the following unique (minimum 18 credit hour requirements):

Mental Health Counseling – Rehabilitation:

COUN 708, 709, 710, 731, 743, 764, 775, 784, 785, 786

Mental Health Counseling – Clinical:

COUN 707, 758, 759, 760, 763, 766, 784, 785, 786

Double major (Mental Health – Rehabilitation and School Counseling)

Regulations on pursuing double majors are presented elsewhere in the catalog and must be followed. The student will be required to complete requirements of both programs. The programs require the following unique (minimum 18 credit hour requirements):

Mental Health Counseling – Rehabilitation:
COUN 708, 709, 731, 743, 764, 775, 784, 785, 786

School Counseling:
COUN 704, 712, 714, 717, 760, 763, 784, 785, 786

Program Specific Academic Policies

Endorsement

The Department stipulates endorsement for employment or credentialing only in the program area in which a student received training.

Program Academic Eligibility

A student will be required to maintain semester GPA of at least 3.0 at the end of every semester irrespective of total attempted hours otherwise the student will be placed on probation for one semester. If the semester GPA and/or the cumulative GPA at the end of the probationary semester remains less than 3.0, the student will be dismissed.

Program Code of Conduct and Ethical Standards of Practice

As pre-professional counselors, graduate students abide by the code of ethics and standards of practice as described in the *Ethical Standards of the American Counseling Association (ACA)*, the *Commission on Rehabilitation Counselor Certification (CRCC)*, *The American Psychological Association*, the *Student Handbook*, the *Graduate Catalog*, and *Department of Human Development and Services Ethical Conduct Policy*.

Consequences of violation of the codes of conduct or ethical standards of practice include but are not limited to one or more of the following:

- Dismissal from the program
- Removal from the course or the field placement and a grade of “F” or “U”
- Referral to authorized campus authorities for further discipline.

Program Academic Progression and Retention Standards

The academic progression and retention standards for counselor education programs are in keeping with Council for the Accreditation of Counseling and Related Educational Programs (CACREP) standards, along with the standards set forth by the Council on Rehabilitation Education (CORE), the American Rehabilitation Counseling Association (ARCA), *Ethical Standards of the American Counseling Association (ACA)*, the *Commission on Rehabilitation Counselor Certification (CRCC)*, *The American Psychological Association*, the *Student Handbook*, the *Graduate Catalog*, and *Department of Human Development and Services Ethical Conduct Policy*.

The Benchmarking Review Process

Once each academic semester a benchmarking review of all enrolled students is conducted. The benchmarking committee is comprised of all full-time tenured and tenure-track counseling faculty and is chaired by a faculty member. Adjunct faculty members are also invited to attend the benchmarking review.

Reviews are conducted using the Benchmarking Assessment Rubric which focuses on academic performance, ethical behavior, and professional disposition. Each student will be notified in writing by the Department Chairperson regarding the outcome of the benchmarking review and a copy will be placed in the student’s file. Students who receive an unsatisfactory evaluation will be placed on probation, provided with a remediation plan and given one semester to implement the remediation plan in order to

improve their performance to a satisfactory level. A subsequent unsatisfactory evaluation after the probationary period will result in dismissal from the program.

Nanoengineering, MS

Joint School of Nanoscience and Nanoengineering

Graduate Coordinator: Lifeng Zhang

Email: lzhang@ncat.edu

Phone: 336-285-2875

Department Chair: Ajit Kelkar

Email: kelkar@ncat.edu

Phone: 336-285-2864

The Master of Science in Nanoengineering degree program is a research master's degree, featuring coursework involving engineering at the nanoscale. It is designed for students with a strong background in engineering or applied science who seek additional, specialized training for industrial or government positions in fields that utilize nanotechnology. Students will have the opportunity to work in one or more of the following research areas: nanobiology, nanomaterials, nanometrology, nanobioelectronics, nanoenergy, and computational nanotechnology.

Additional Admission Requirements

- Bachelor's degree in engineering or a closely related field
- Two of the three recommendation letters must be from University faculty members
- Current curriculum vitae

Degree Requirements

Total credit hours: 30

- Core courses (15 credits): NANO 701, 702, 703, 704, 705

Thesis option:

- Select 9 credit hours from NANO 711, 721, 731, 741, 761, 790
- Thesis (NANO 797: 6 credits)
- Participate in all JSNN Seminars
- Pass thesis defense

Project Option:

- Select 12 credit hours from NANO 711, 721, 731, 741, 761, 790
- Project (NANO 796: 3 credits)
- Participate in all JSNN Seminars

Nanoengineering, PhD

Joint School of Nanoscience and Nanoengineering

Graduate Coordinator: Shyam Aravamudhan **Email:** saravamu@ncat.edu

Phone: 336-285-2856

Department Chair: Ajit Kelkar

Email: kelkar@ncat.edu

Phone: 336-285-2864

The Ph.D. program in Nanoengineering features coursework, laboratory rotations and extensive dissertation research involving engineering at the nanoscale. It is designed for students with a strong academic track record who seek advanced-level education and training to pursue careers in academia, industrial or government organization that utilize nanotechnology. Students will have the opportunity to work in one or more of the following research areas: nanobiology, nanomaterials, nanometrology, nanobioelectronics, nanoenergy, and computational nanotechnology.

Additional Admission Requirements

- Bachelor's degree in engineering or a closely related field with minimum 3.5 GPA or master's degree in engineering or a closely related field
- GRE scores
- Two of the three recommendation letters must be from University faculty members
- Current curriculum vitae

Degree Requirements

Total credit hours: 60 (post baccalaureate)

- Core courses (15 credits): NANO 701, 702, 703, 704, 705
- Lab Rotations: Select 3 credit hours from: NANO 851, 852, 853, 854, 855 or consortium course NAN 611 (UNCG)
- Select 9 credit hours from: NANO 811, 812, 821, 823, 825, 827, 831, 841, 861, 885, 990 or consortium courses NAN 700-798 (UNCG) or other 800 level courses with approval of the advisor and graduate coordinator/department chair
- Select 9 credit hours from: NANO 711, 721, 731, 741, 811, 812, 821, 823, 825, 827, 831, 841, 861, 885, 990 or consortium courses NAN 600-798 (UNCG) excluding NAN 621, 622, 628 or other courses with approval of the advisor and graduate coordinator/department chair
- Supervised Research (6 credits): NANO 994
- Teach at least one semester
- Dissertation (18 credits): NANO 997
- Pass qualifying exam, preliminary exam, dissertation defense
- Attend all JSNN seminars

Qualifying Examination:

The Qualifying Examination is given to assess student competence in a broad range of relevant subject areas. The Qualifying Examination is given once each semester (Fall and Spring) and it is held on two consecutive days. Only students with unconditional status and in good academic standing may take the Qualifying Examination. Students must take the Qualifying Examination by the end of the second semester of enrollment. In case of failure to pass in this first attempt, students will have the opportunity to take the exam in the following semester. Failure to pass the Qualifying Examination by the end of the third enrolled semester or the second attempt will result in the termination from the program.

Preliminary Oral Examination:

The Preliminary Oral Examination is conducted by the student's dissertation committee and is a defense of the student's dissertation proposal. Students must have successfully completed the qualifying examination to be eligible for the Preliminary Oral Examination. Passing this exam satisfies requirements

for Ph.D. Candidacy. Failure on the examination may result in dismissal from the doctoral program. The student's Advisory Committee may permit one re-examination. At least one full semester must elapse before the re-examination. Failure on the second attempt will result in dismissal from the doctoral program.

Admission to Ph.D. Candidacy

A student will be admitted to candidacy upon successful completion of the Qualifying Examination and Preliminary Oral Examination.

Dissertation Research:

A student may not register for dissertation credits before passing Qualifying Examination. No more than 18 dissertation credits are counted toward the total credit hours requirement for the degree.

Final Oral Dissertation Defense:

The Final Oral Dissertation Defense is conducted by the student's dissertation committee. This examination is the final dissertation defense presentation that is scheduled after a dissertation is completed. The examination may be held no earlier than six months after admission to candidacy. Failure on the examination may result in dismissal from the doctoral program. The student's Advisory Committee may permit one re-examination. At least one full semester must elapse before the re-examination. Failure on the second attempt will result in dismissal from the doctoral program.

Submission of Dissertation:

Upon passing the Ph.D. Final Oral Dissertation Defense, the Ph.D. student must have the dissertation approved by each member of the student's dissertation committee. The approved dissertation must be submitted to The Graduate College by the deadline given in the academic calendar, and must conform to the Graduate College's guidelines for theses and dissertations.

Program Specific Academic Policies:

- The qualifying exam must be attempted for the 1st time by the end of the 2nd semester and must be passed by the end of the 3rd semester.
- Assist the instructor in teaching a course or laboratory for at least 1 semester.

Physics, MS

College of Science and Technology

Graduate Coordinator: Ashot Gasparian **Email:** agaspari@ncat.edu **Phone:** 336-285-2112

Department Chair: Abdellah Ahmidouch **Email:** abdellah@ncat.edu **Phone:** 336-285-2105

The Masters of Science program in Physics prepares students for professional careers in industrial and governmental research, developmental applications of physics, teaching, and further study toward a Ph.D. in physics. Physics Masters are trained to use their advanced knowledge and analytical skills to solve complex problems in industry and research labs. Experimental Low and Medium Energy Physics, Atmospheric Science, Chemical Physics, Physics Education, Seismic Data Processing, Computational Atomic Molecular and Optical Physics. Opportunities to collaborate exist with major research institutions such as Duke University, the University of North Carolina at Chapel Hill, North Carolina State University, Wake Forest University, Stanford University, Pennsylvania State University, Hampton University, the University of Virginia and others. Collaborations with national laboratories include the Thomas Jefferson National Accelerator Facility (JLab), NOAA-Earth System Research Laboratory (NOAA-ESRL), Lawrence Berkeley National Laboratory (LBNL), National High Magnetic Field Lab-Florida, Los Alamos National Laboratory (LANL), and Oak Ridge National Laboratory (ORNL). International collaborations include the University of Marseilles in France, the Addis Ababa University in Ethiopia, ITEF Moscow, Russia, and the Institute for High Energy Physics at Protvino, Russia.

Additional Admission Requirements

- An undergraduate degree in physics or its equivalent
- Applicant's background reflects maturity in physics from junior and senior level undergraduate courses in classical mechanics, electromagnetism, thermodynamics and statistical mechanics, and quantum physics

Program Outcomes

- **Critical Thinking:** Students at the MS-Physics program will be able to think critically and use relevant physics concepts to solve physics problems and analyze situations involving physics.
- **Communication:** MS-Physics students will be able to articulate physical concepts, research work, and findings with tact and professionalism, both orally and in writing.
- **General Physics Knowledge and Analytical Reasoning:** Students will acquire an in-depth knowledge and thorough understanding of physical principles. Students will develop analytical skills to combine them with their working knowledge to explain the world around us and how things work at the fundamental level.
- **Physics Specialty Expertise:** Students will develop a physics specialty area of expertise through course work and research.
- **Scientific Methodology:** Students will develop an understanding of scientific methodology, through data collection from observations, setting up laboratory experiments and data acquisition, data analysis, data interpretation and testing of model/hypothesis, and reporting of data.
- **Computer and Computational Expertise:** MS-Physics students will develop competency in using computers and computational methods through:
 1. use or write software code to acquire/analyze/visualize data
 2. data analysis
 3. computer simulations

Degree Requirements

Total credit hours: 30

- Core courses (12 credits): PHYS 600, 615, 620, 630

Thesis option:

- Take 12 credits of additional PHYS or technical electives with approval of advisor
- Thesis (PHYS 797: 6 credits)
- Pass thesis defense

Project Option:

- Take 15 credits of additional PHYS or technical electives courses with approval of advisor
- Project (PHYS 796: 3 credits)

Course Option:

- Take 18 credits of additional PHYS or EES courses with approval of advisor

Reading Education K-12, MAEd

College of Education

Graduate Coordinator: Nichole Smith

Email: nsmith2@ncat.edu

Phone: (336) 285-4411

Department Chair: Erika R. Williams

Email: ewilliam@ncat.edu

Phone: (336) 334-7848

The Master of Arts in Education, Reading Education degree program prepares highly-qualified reading specialists for K-12 students. Through courses in literacy and language development, diagnostic and prescriptive reading, and assessment and literacy instruction, candidates in the Master of Arts in Education, Reading Education program develop knowledge, skills, dispositions, and professional attitudes that empower them to become lifelong learners and exemplary educational leaders inside and outside K-12 learning contexts. The MAEd program in Reading Education is aligned with professional standards commensurate with the Interstate Teacher Assessment and Support Consortium (InTASC), the National Council for the Accreditation of Teacher Education (NCATE), the North Carolina Department of Public Instruction (NCDPI), and National Board Professional Teaching Standards (NBPTS). The Master of Arts in Education (MAEd) program in Reading Education is an accredited program by the National Council for the Accreditation of Teacher Education (NCATE) and by the North Carolina Department of Public Instruction (NCDPI).

Teacher Education Licensure: Completing this master's degree and obtaining a teaching license are separate processes. Admission to this master's program does not guarantee admission to the Teacher Education Licensure program. To be recommended for licensure, candidates must first be formally admitted to the Teacher Education Licensure Program. Failure to complete the Teacher Education admission requirements during the first semester of enrollment may result in the student's inability to register for certain required courses. Applicants and current students should review licensure requirements at <http://www.ncat.edu/academics/schools-colleges/soe/teacher-education/index.html> or visit the School of Education for guidance on specific requirements.

Additional Admission Requirements

- Graduate Record Examination (GRE) Scores
- Standard Professional 1 or 2 NC Teaching License
- Statement of Purpose

Program Outcomes:

Candidates in the MAED Reading Education program will: (1) demonstrate effective research writing skills appropriate for educational scholars, (2) demonstrate effective knowledge, skills, and attitudes in diversity issues, learning theories, technological skills, and methods of instruction, (3) demonstrate the ability to implement research-based reading strategies supported by learning theories and aligned to the North Carolina Common Core and Essential Standards with K-12 students, and (4) demonstrate their depth of literacy knowledge and breadth of literacy pedagogical skills with K-12 students from diverse backgrounds.

Degree Requirements:

Total credit hours: 30

- Core Courses (9 credit hours): CUIN 711, 729, 755
- Take 21 credits: READ 735, 736, 738, 756, 757, 774; ELED 751

Prior to beginning Phase II, candidates must have: (1) a Planning Contract on file with the program coordinator, (2) a minimum 3.00 Grade Point Average, and (3) passing scores on the core comprehensive examination.

Phase II

- Take 24 credit hours: READ 735, 736, 737, 738, 756, 757, 759, 774; ELED 789

Up to six credit hours may be waived for students who have National Board certification.

Rehabilitation Counseling and Counselor Education, PhD

College of Education

Graduate Coordinator: Tyra Turner Whittaker **Email:** tnwhitta@ncat.edu

Phone: (336) 285-4395

Department Chair: Caroline Booth

Email: csbooth@ncat.edu

Phone: (336) 285-4386

The Doctoral Program in Rehabilitation Counseling and Counselor Education is designed to prepare culturally competent students to work as counselor educators, researchers, clinicians, and supervisors in academic and non-academic settings. In addition to establishing a core foundation in rehabilitation counseling and research, major emphasis is provided in the area of Trauma and Trauma Informed Care. The primary educational objectives of the program are: a) to increase students' knowledge of the role and functions of rehabilitation counselor educators, researchers, and counselors, b) to equip students with unique counseling and research skills to provide effective rehabilitation counseling, education, and research within a cultural context, c) to prepare students to obtain content knowledge in cultural diversity, trauma informed care, and additional expertise in specific areas in rehabilitation education, d) to equip students with knowledge, skills, and experiences to increase the body of research addressing diversity, social justice, and disability issues, and e) to prepare students to address professional issues and become leaders and researchers in rehabilitation counselor education and disability research through professional associations, publications, and professional development.

Additional Admission Requirements

- Master's in Rehabilitation Counseling (CORE), or Counseling (CACREP), or a related profession with overall GPA of 3.5 or higher
- GRE Score
- Two years of work experience preferred
- Statement of purpose: Describe career goals, research interests and a list of publications, professional and volunteer experience relevant to intended program of study, academic honors and organizations.
- Three professional letters of recommendation must include letters from professor(s) from Master's program and from supervisor(s) from professional settings
- A current resume or curriculum vita
- Licensure and/or certification documentation
- Submission of a 10-12 page writing sample
- Interview: After initial review of all applications, the applicants with greatest potential are also expected to participate in a pre-admission interview with the Counseling faculty. Pre-admission interviews can include: (a) individual interviews, (b) group interaction with observation, and (c) on-site writing sample.

Program Outcomes

- **Critical Thinking:** Students will develop skills and attitudes of effective thinking that employ the use of thoughtful reflection and logical inquiry to draw evidence-based conclusions as they relate to community counseling.
- **Oral Communication Skills:** Students will demonstrate proficiency in communicating in individual dyads and small and large group settings and in appropriate use of grammar to communicate counseling findings, while avoiding sexist language, doublespeak and clichés. Evaluation occurs during the benchmarking process. Students must receive a satisfactory rating from the majority of faculty to earn a satisfactory rating. Faculty will evaluate 100% of the student population.
- **Written Communication:** Students will demonstrate proficiency in academic and scientific writing, which includes avoiding digressions, consistent tenses, using the active voice and citing sources as well as findings, professional documentation, and report writing: with emphasis on APA publishing guidelines.

- **Cultural Self-Awareness and Sensitivity:** Students will demonstrate awareness of self, including knowledge of macro, micro, and meso ecological systems.
- **Cultural Competence:** Students will demonstrate an understanding of the cultural context of relationships, issues, and trends in a multicultural society.
- **Ethical Practice:** Students will demonstrate understanding and application of relevant professional ethical standards.
- **Professionalism:** Students will demonstrate professional maturity, integrity, and discipline consistent with professional standards of practice.
- **Research and Design:** Graduate community counseling students will demonstrate proficiency in designing quantitative, qualitative, single case designs, action, and outcome based research, as well as co-occurring and support software packages (e.g., SPSS). Students will understand ethics surrounding Human Subjects Social and Behavioral Science research procedures and Responsible Conduct in Research.
- **Research Evaluation:** Students will demonstrate proficiency in evaluating empirical and non-empirical research. Students will be able to review the professional literature and glean from the review relevant information for both research and practice. Students will be able evaluate research and its application to field experiences. Students will develop a research paper that reflects their knowledge of this content. The specifics of the research paper along with the grading rubric are presented in the achievement summary.
- **Statistics:** Students will demonstrate proficiency in basic statistics methods including scales of measurement, measures of central tendency, indices of variability, shapes and type of distributions, correlations, reliability and validity. Students will apply supportive software packages (e.g., MS Excel, SPSS).
- **Technological Competence:** Students will demonstrate proficiency in implementing best technology practices.

Degree Requirements

Total credit hours: 63 (post-master's)

- Take Core courses (27 credits): COUN 800, 802, 812, 818, 825, 850, 860, 880, 989
- Statistics Core courses (15 credit hours): COUN 810, 815, 830, 865, 870
- Field experience (9 credit hours): COUN 984, 985, 986
- Dissertation (12 credits): COUN 997
- Pass qualifying exam, preliminary exam, dissertation defense

Dissertation Research:

A student may not register for dissertation credits before passing Qualifying Examination. No more than 12 dissertation credits are counted toward the total credit hours requirement for the degree.

Qualifying Examination:

The Qualifying Examination is given to assess the student's competence in a broad range of relevant subject areas. Only students with unconditional status and in good academic standing may take the Qualifying Examination. A student who wants to retake the Qualifying Examination must apply to retake the Qualifying Examination by the posted deadline. No student is permitted to take the Qualifying Examination more than twice. A student not recommended for re-examination or who fails the exam on a second attempt may be dismissed from the doctoral program.

Preliminary Oral Examination:

The Preliminary Oral Examination is conducted by the student's dissertation committee and is a defense of the student's dissertation proposal. Passing this exam satisfies requirements for Ph.D. Candidacy. Failure on the examination may result in dismissal from the doctoral program. The student's Advisory Committee

may permit one re-examination. At least one full semester must elapse before the re-examination. Failure on the second attempt will result in dismissal from the doctoral program.

Admission to Candidacy

Student will be admitted to candidacy upon successful completion of the Qualifying Exam and the Preliminary oral Exam.

Final Oral Examination:

The Final Oral Examination is conducted by the student's dissertation committee. This examination is the final dissertation defense presentation that is scheduled after a dissertation is completed. The examination may be held no earlier than one semester (or four months) after admission to candidacy. Failure on the examination may result in dismissal from the doctoral program. The student's Advisory Committee may permit one re-examination. At least one full semester must elapse before the re-examination. Failure on the second attempt will result in dismissal from the doctoral program.

Submission of Dissertation:

Upon passing the Ph.D. Final Oral Examination, the Ph.D. student must have the dissertation approved by each member of the student's dissertation committee. The approved dissertation must be submitted to The Graduate College by the deadline given in the academic calendar, and must conform to the Graduate College's guidelines for theses and dissertations.

Program Specific Academic Policies

Endorsement

The Department stipulates endorsement for employment or credentialing only in the program area in which a student received training.

Program Academic Eligibility

A student will be required to maintain semester GPA of at least 3.0 at the end of every semester irrespective of total attempted hours otherwise the student will be placed on probation for one semester. If the semester GPA and/or the cumulative GPA at the end of the probationary semester remains less than 3.0, the student will be dismissed.

Program Code of Conduct and Ethical Standards of Practice

As pre-professional counselors, graduate students abide by the code of ethics and standards of practice as described in the *Ethical Standards of the American Counseling Association (ACA)*, the *Commission on Rehabilitation Counselor Certification (CRCC)*, *The American Psychological Association*, the *Student Handbook*, the *Graduate Catalog*, and *Department of Human Development and Services Ethical Conduct Policy*.

Consequences of violation of the codes of conduct or ethical standards of practice include but are not limited to one or more of the following:

- Dismissal from the program
- Removal from the course or the field placement and a grade of "F" or "U"
- Referral to authorized campus authorities for further discipline.

Program Academic Progression and Retention Standards

The academic progression and retention standards for counselor education programs are in keeping with Council for the Accreditation of Counseling and Related Educational Programs (CACREP) standards, along with the standards set forth by the Council on Rehabilitation Education (CORE), the American Rehabilitation Counseling Association (ARCA), *Ethical Standards of the American Counseling Association (ACA)*, the *Commission on Rehabilitation Counselor Certification (CRCC)*, *The American*

Psychological Association, the Student Handbook, the Graduate Catalog, and Department of Human Development and Services Ethical Conduct Policy.

The Benchmarking Review Process

Once each academic semester a benchmarking review of all enrolled students is conducted. The benchmarking committee is comprised of all full-time tenured and tenure-track counseling faculty and is chaired by a faculty member. Adjunct faculty members are also invited to attend the benchmarking review.

Reviews are conducted using the Benchmarking Assessment Rubric which focuses on academic performance, ethical behavior, and professional disposition. Each student will be notified in writing by the Department Chairperson regarding the outcome of the benchmarking review and a copy will be placed in the student's file. Students who receive an unsatisfactory evaluation will be placed on probation, provided with a remediation plan and given one semester to implement the remediation plan in order to improve their performance to a satisfactory level. A subsequent unsatisfactory evaluation after the probationary period will result in dismissal from the program.

School Administration, MSA

College of Education

Graduate Coordinator: Alisa Taliaferro

Email: astaliaf@ncat.edu

Phone: 336-334-7757

Department Chair: Alisa Taliaferro

Email: astaliaf@ncat.edu

Phone: 336-334-7757

The Master of School Administration (MSA) program is designed to prepare school executives to assume leadership roles in schools and school systems, primarily as superintendents, central office administrators, principals and assistant principals. Graduates of School Administration program are eligible for licensure from the North Carolina State Department of Public Instruction (SDPI) and may be qualified for administration certification in other states. Students who meet the NC Principal Fellows criteria, and who are interested in full time study and full time internship may apply to the NC Principal Fellows Program for full tuition and stipend to enroll in the MSA program. Program content is aligned with the North Carolina Standards for School Executives, the Interstate School Leaders Licensure Consortium standards for school leaders (ISLLC), the Educational Leadership Constituent Council (ELCC), and the National Council for Accreditation of Teacher Education (NCATE) for advanced programs in educational leadership.

Additional Admission Requirements

- Three years of successful teaching experiences (or educational-related experience).
- Two years of Adult Leadership experience (e.g. department chair, grade-level chair)
- NC Standard II Professional License
- Three official letters of recommendation, signed and sealed by the writer. One of the letters must be from current administrator (e.g. principal or assistant principal).
- Faculty Interview
- Electronic portfolio that includes evidence in the following areas:
 - Support for all students achieving high standards of learning
 - Accomplished classroom instruction which shall include data providing evidence of two years of student growth and learning within the last 5 years
 - Significant leadership roles in past positions
 - Strong oral and written communication skills
 - Analytic abilities needed to collect and analyze data for student improvements
 - Demonstrated respect for family and community
 - Strong interpersonal skills
 - Knowledge of curriculum and instructional practices
- Written Statements -- please see College of Education website for writing prompts.
- A copy of most recent NC Teacher Evaluation (or its equivalent) with at least a minimum rating of Proficient in all standards.
- Current resume

Degree Requirements

Total credit hours: 30

- Core courses (18 credits): MSA 770, 771, 774, 776, 778, 765
- Internship Supervision I (MSAL 784: 6 credits)
- Internship Supervision II (MSAL 785: 6 credits)
- Pass comprehensive exam
- Earn a minimum rating of proficient on NCDPI (North Carolina Department of Public Instruction) School Executives Evidences

School Counseling, MS

College of Education

Graduate Coordinator: Angel Dowden

Email: amdowden@ncat.edu

Phone: (336) 285-4484

Department Chair: Caroline Booth

Email: csbooth@ncat.edu

Phone: (336) 285-4386

The School Counseling program is designed for individuals seeking a professional career in elementary or secondary school counseling. The School Counseling program is a flexible and high quality evening program which offers students the opportunity to create an individualized rate of matriculation in either part-time or full-time enrollment. The School Counseling program is nationally accredited by the Council on the Accreditation of Counseling and Related Educational Programs (CACREP). Curricular experiences encompasses each of CACREP's eight core areas of professional counseling which include Professional Identity, Social and Cultural Diversity, Human Growth and Development, Career Development, Helping Relationships, Group Work, Assessment, and Research and Program Evaluation. Students are prepared to take the PRAXIS II Specialty test in School Guidance and Counseling and the National Counseling Examination (NCE) of the National Board for Certified Counselors (NBCC) which is administered twice annually at NCA&T and apply for licensure as a licensed professional counselor through the North Carolina Board of Licensed Professional Counselors upon completion of the program. Students who pass the NCE prior to graduation are recognized as board eligible by NBCC.

Teacher Education Licensure: Completing this master's degree and obtaining a teaching license are separate processes. Admission to this master's program does not guarantee admission to the Teacher Education Licensure program. To be recommended for licensure, candidates must first be formally admitted to the Teacher Education Licensure Program. Failure to complete the Teacher Education admission requirements during the first semester of enrollment may result in the student's inability register for certain required courses. Applicants and current students should review licensure requirements at <http://www.ncat.edu/academics/schools-colleges/soe/teacher-education/index.html> or visit the School of Education for guidance on specific requirements.

Additional Admission Requirements

- Statement of purpose: Describe career goals, research interests and a list of publications, professional and volunteer experience relevant to intended program of study, academic honors and organizations.
- Three professional letters of recommendation from persons who know the applicant in either an academic or supervisory capacity. Letters from family members, acquaintances, and friends are not acceptable
- A current resume or curriculum vita
- Interview: After initial review of all applications, the applicants with greatest potential are also expected to participate in a pre-admission interview with the Counseling faculty. Pre-admission interviews can include: (a) individual interviews, (b) group interaction with observation, and (c) on-site writing sample.

Program Outcomes

- Research Evaluation: Students will demonstrate proficiency in evaluating empirical and non-empirical research. Students will be able to review the professional literature and glean from the review relevant information for both research and practice. Students will be able evaluate research and its application to field experiences. Students will develop a research paper that reflects their knowledge of this content. The specifics of the research paper along with the grading rubric are presented in the achievement summary.
- Research and Design: Graduate community counseling students will demonstrate proficiency in designing quantitative, qualitative, single case designs, action, and outcome based research, as well as co-occurring and support software packages (e.g., SPSS). Students will understand ethics surrounding

Human Subjects Social and Behavioral Science research procedures and Responsible Conduct in Research.

- **Statistics:** Students will demonstrate proficiency in basic statistics methods including scales of measurement, measures of central tendency, indices of variability, shapes and type of distributions, correlations, reliability and validity. Students will understand the use and availability of supportive software packages (e.g., MS Excel, SPSS).
- **Oral Communication Skills:** Students will demonstrate proficiency in communicating in individual dyads and small and large group settings.
- **Written Communication:** Students will demonstrate proficiency in academic and scientific writing, professional documentation, and report writing: with emphasis on APA publishing guidelines.
- **Cultural Awareness and Sensitivity:** Students will demonstrate awareness of self, including knowledge of macro, micro, and meso ecological systems.
- **Cultural Competence:** Students will demonstrate an understanding of the cultural context of relationships, issues, and trends in a multicultural society.
- **Ethical Practice:** Students will demonstrate understanding and application of relevant professional ethical standards.
- **Professionalism:** Students will demonstrate professional maturity, integrity, and discipline consistent with professional standards of practice.
- **Technological Competence:** Students will demonstrate proficiency in implementing best technology practices.

Degree Requirements:

Total credit hours: 60

- Core courses (18 credits): COUN 702, 713, 736, 740, 750, 770
- Take 21 credits: COUN 704, 710, 712, 714, 717, 760, 763
- Electives: Select 12 credit hours with approval of advisor
- Practicum (COUN 784: 3 credits)
- Internship I (COUN 785: 3 credits)
- Internship II (COUN 786: 3 credits)
- Pass comprehensive exam

Practicum and Internships

Internships COUN 785 and 786 involve supervised professional experiences in settings appropriate to the student's vocational objectives. The internships will provide practical work in the student's area of specialization. Internships include 600 hours of field experience. Students must complete a minimum of 240 hours of direct services with clients. Each week, students receive one hour of individual supervision from their site supervisors and one and one-half hours group supervision from their university supervisors during seminar. Students in all field experience placements are required to create program-appropriate audio recordings and/or participate in live supervision of their interactions with clients for review by their University Supervisor

Double major (School Counseling and Mental Health Counseling – Clinical)

Regulations on pursuing double majors are presented elsewhere in the catalog and must be followed. The student will be required to complete requirements of both programs. The programs require the following unique (minimum 18 credit hour requirements):

School Counseling:

COUN 704, 710, 712, 714, 717, 784, 785, 786

Mental Health Counseling – Clinical:

COUN 707, 758, 759, 784, 785, 786

Double major (School Counseling and Mental Health – Rehabilitation)

Regulations on pursuing double majors are presented elsewhere in the catalog and must be followed. The student will be required to complete requirements of both programs. The programs require the following unique (minimum 18 credit hour requirements):

School Counseling:

COUN 704, 712, 714, 717, 760, 763, 784, 785, 786

Mental Health Counseling – Rehabilitation:

COUN 708, 709, 731, 743, 764, 775, 784, 785, 786

Licensure

The student who has completed all requirements for graduation will also be eligible to apply for state certification/licensure in School Counseling by taking the PRAXIS II Specialty test in School Guidance and Counseling. Students are also eligible to become Nationally Certified Counselors by taking the National Counselor Examination offered by the National Board of Certified Counselors prior to graduation. In addition, the North Carolina Board for Licensed Professional Counselors recognizes this exam as their licensure exam. Student pursuing a licensure in School Counseling must take the PRAXIS II Specialty test in School Guidance and Counseling. Scores needed to pass: Specialty Area Exam (School Guidance and Counseling) 570. For further information consult the PRAXIS Booklet or the School of Education Dean's Office, 380 Proctor Hall, (336) 334-7757 or visit the PRAXIS II website.

Program Specific Academic Policies

Endorsement

The Department stipulates endorsement for employment or credentialing only in the program area in which a student received training.

Program Academic Eligibility

A student will be required to maintain semester GPA of at least 3.0 at the end of every semester irrespective of total attempted hours otherwise the student will be placed on probation for one semester. If the semester GPA and/or the cumulative GPA at the end of the probationary semester remains less than 3.0, the student will be dismissed.

Program Code of Conduct and Ethical Standards of Practice

As pre-professional counselors, graduate students abide by the code of ethics and standards of practice as described in the *Ethical Standards of the American Counseling Association (ACA)*, the *Commission on Rehabilitation Counselor Certification (CRCC)*, *The American Psychological Association*, the *Student Handbook*, the *Graduate Catalog*, and *Department of Human Development and Services Ethical Conduct Policy*.

Consequences of violation of the codes of conduct or ethical standards of practice include but are not limited to one or more of the following:

- Dismissal from the program
- Removal from the course or the field placement and a grade of “F” or “U”
- Referral to authorized campus authorities for further discipline.

Program Academic Progression and Retention Standards

The academic progression and retention standards for counselor education programs are in keeping with Council for the Accreditation of Counseling and Related Educational Programs (CACREP) standards,

along with the standards set forth by the Council on Rehabilitation Education (CORE), the American Rehabilitation Counseling Association (ARCA), *Ethical Standards of the American Counseling Association (ACA)*, the *Commission on Rehabilitation Counselor Certification (CRCC)*, *The American Psychological Association*, the *Student Handbook*, the *Graduate Catalog*, and *Department of Human Development and Services Ethical Conduct Policy*.

The Benchmarking Review Process

Once each academic semester a benchmarking review of all enrolled students is conducted. The benchmarking committee is comprised of all full-time tenured and tenure-track counseling faculty and is chaired by a faculty member. Adjunct faculty members are also invited to attend the benchmarking review.

Reviews are conducted using the Benchmarking Assessment Rubric which focuses on academic performance, ethical behavior, and professional disposition. Each student will be notified in writing by the Department Chairperson regarding the outcome of the benchmarking review and a copy will be placed in the student's file. Students who receive an unsatisfactory evaluation will be placed on probation, provided with a remediation plan and given one semester to implement the remediation plan in order to improve their performance to a satisfactory level. A subsequent unsatisfactory evaluation after the probationary period will result in dismissal from the program.

Social Work (Joint with UNCG), MSW

College of Health and Human Sciences

Graduate Coordinator: Jeffrey Shears

Email: jkshears@ncat.edu

Phone: (336)-285-2361

Department Chair: Arnold Barnes

Email: abarnes@ncat.edu

Phone: (336)-285-2293

The Joint Master of Social Work (MSW) program represents the efforts of faculty at North Carolina Agricultural and Technical State University (NCA&TSU) and The University of North Carolina at Greensboro (UNCG). This is a single academic program with participation in instruction by faculty from each department. Instruction is conducted on the campuses of both universities. The program is accredited by The Council on Social Work Education and the curriculum has been designed by the joint faculty to provide students with a multicultural clinical social work education. The model for the curriculum is based on CSWE social work competencies, and contemporary, state-of-the-art theory and practice methods. The curriculum is organized by generalist year, concentration year, and field instruction. The primary purpose of the MSW program is to prepare students for multicultural clinical social work practice.

Additional Admission Requirements

- An acceptable score on the GRE.
- Evidence of a liberal arts foundation to include the following minimum 30 credit hours: 18 Social and Behavioral Sciences (Political Science, Psychology, Anthropology, Economics, Ethnic/Global Studies, History, and Sociology); 6 Humanities; 3 Human Biology or Human Development; 3 Statistics
- Applicants must demonstrate intellectual and personal qualifications considered essential to the successful practice of social work, such as sensitivity and responsiveness in relationships, concern for the need of others, adaptability, good judgment, creativity, integrity, and skill in oral and written communication. This determination shall be based on a review of the applicant's references and written personal statement.
- Applicants to the Advanced Standing plan of study must have earned a Bachelor of Social Work degree from a Council on Social Work Education accredited program, have a GPA in social work courses of 3.2 or better, and provide a letter of recommendation from his/her B.S.W. field supervisor (as one of the three recommendations required).

Program Outcomes

The JMSW Program's competency-based curriculum has been designed to comply with the Council on Social Work Education's (CSWE) Educational Policy and Accreditation Standards (EPAS), as revised in 2015. CSWE has delineated 9 core competencies, listed below, that must be adequately addressed in all BSW and MSW curricula.

- Competency 1: Demonstrate Ethical and Professional Behavior
- Competency 2: Engage Diversity and Difference in Practice
- Competency 3: Advance Human Rights and Social, Economic, and Environmental Justice
- Competency 4: Engage in Practice-informed Research and Research-informed Practice
- Competency 5: Engage in Policy Practice
- Competency 6: Engage with Individuals, Families, Groups, Organizations, and Communities
- Competency 7: Assess Individuals, Families, Groups, Organizations, and Communities
- Competency 8: Intervene with Individuals, Families, Groups, Organizations, and Communities
- Competency 9: Evaluate Practice with Individuals, Families, Groups, Organizations, and Communities

Degree Requirements

Total credit hours: 60 (two year and three year options), 42 (advanced standing option)

Two year option

- Generalist Courses: Take 30 credit hours: SOWK 609, 618, 619, 621, 622, 623, 624, 626, 784, 785
- Concentration Courses: Take 24 credit hours: SOWK 634, 644, 652, 653, 786, 787, 789, 792
- Electives: Select 6 credit hours: SOWK 600-799

Advanced standing option

Requires full time enrollment by students with Bachelor of Social Work Degrees.

- Summer Bridge/Transition Courses: Take 12 credit hours: SOWK 623, 624, 626, 631
- Take 12 credit hours: SOWK 634, 644, 652, 653
- Take 12 credit hours: 786, 787, 789, 792
- Electives: Select 6 credit hours from: SOWK 600-799

Internships

The JMSW Field Instruction Program provides directed learning opportunities through social work internships. Upon completion of the of field instruction program, two year students will have a total of 1,008 hours in field internships. Advanced Standing students will have to complete a total of 672 hours.

Technology Management, MS

College of Science and Technology

Graduate Coordinator: Devang Mehta

Department Chair: Ji Shen

Email: mehtad@ncat.edu

Email: shen@ncat.edu

Phone: 336-285-3109

Phone: 336-285-3158

The Association of Technology, Management, and Applied Engineering (ATMAE) defines Technology Management as the field concerned with the supervision of personnel across the technical spectrum and a wide variety of complex technological systems. There is an increasing demand for experienced professionals who can play leadership roles involving technology innovation; development and deployment of new technologies across a broad spectrum of industries; planning, problem solving, and decision-making to improve business performance.

Program Outcomes

- **Communication:** During the coursework in the program, students will be able to communicate effectively the functions performed by Technology professionals in the installation, design, and utilization of software applications and equipment with the clarity and precision required by standards commonly practiced in the profession.
- **Critical Thinking:** During the coursework in the program, students will be able to define technological requirements appropriate to commonly encountered problems and solutions in workplace/enterprise.
- **Innovation:** During the coursework in the program, students will be able to design and implement a project that meets the desired technical specification, process, component, and/or program.
- **Global Awareness - Social Responsibility:** During the coursework in the program, students will be able to analyze the impact of Technology, both locally and globally, on individuals, organizations, and society.
- **Ethical Leadership:** During the coursework in the program, students will be able to understand the professional, legal, security, and social issues and responsibilities of the technologist professions engaged in developing innovative projects/systems solutions that address specific issues.

Degree Requirements

Total credit hours: 30

- Core courses (9 credit hours): MSTM 701, 703, 704

Thesis option

- Select 15 credits from AET, CM, ECT, GCS, ITT, OSH, TECH with approval of advisor
- Thesis (6 credits): MSTM 797
- Pass thesis defense

Non-thesis option

- Select 21 credits from AET, CM, ECT, GCS, ITT, OSH, TECH with approval of advisor

Technology Management – Construction Science and Management PSM, MS

College of Science and Technology

Graduate Coordinator: Musibau Shofoluwe **Email:** musibaus@ncat.edu **Phone:** 336-285-3130

Department Chair: Ji Shen **Email:** shen@ncat.edu **Phone:** 336-285-3158

The Construction Science and Management Professional Science Masters concentration is designed to prepare professionals to take leadership roles in the construction industry.

Program Outcomes

- **Communication:** During the coursework in the program, students will be able to communicate effectively the functions performed by Technology professionals in the installation, design, and utilization of software applications and equipment with the clarity and precision required by standards commonly practiced in the profession.
- **Critical Thinking:** During the coursework in the program, students will be able to define technological requirements appropriate to commonly encountered problems and solutions in workplace/enterprise.
- **Innovation:** During the coursework in the program, students will be able to design and implement a project that meets the desired technical specification, process, component, and/or program.
- **Global Awareness - Social Responsibility:** During the coursework in the program, students will be able to analyze the impact of Technology, both locally and globally, on individuals, organizations, and society.
- **Ethical Leadership:** During the coursework in the program, students will be able to understand the professional, legal, security, and social issues and responsibilities of the technologist professions engaged in developing innovative projects/systems solutions that address specific issues.

Degree Requirements

Total credit hours: 30

- Core courses (9 credit hours): MSTM 701, 703, 704
- Disciplinary Electives: Take 12 credit hours from: CM 679, 708, 710; LAND 682
- Business/management Electives: Select 6 credit hours from: CM 692, 764, 768; MGMT 712
- Take 3 credits from: Project: MSTM 784, 796

Certificate – Advanced Waste Management, PB

College of Agriculture and Environmental Sciences

Graduate Coordinator: Godfrey A. Uzochukwu **Email:** uzo@ncat.edu

Phone: 336-334-7030

Department Chair: Abolghasem Shahbazi **Email:** ash@ncat.edu

Phone: 336- 285- 4851

The advanced interdisciplinary waste management certificate program is open to all graduate students. It is designed to create a talented pool of advanced students who will become leaders in environmental and waste management fields.

Program Requirements

Total credit hours: 12

- Capstone: Select 1 credit hour: WMI 747 (1 credit hour capstone)
- Select 5 credit hours from: WMI 617, 619, 629
- Select 6 credit hours from: Advanced environmental/waste management/related courses in major. Special topic/project courses in environmental/waste management in major are acceptable

Certificate - Community College Teaching, PB

College of Education

Graduate Coordinator: Geleana Alston

Email: gdalston@ncat.edu

Phone: (336) 285-4385

Department Chair: Comfort Okpala

Email: cookpala@ncat.edu

Phone: 336-256-2342

Additional Admission Requirements

- Available only as an add-on certificate to students admitted to the MS in Adult Education program at North Carolina A&T State University.

Certificate Requirements

Total credit hours: 15

- Take 15 credit hours: ADED 714, 719, 773, 778, 784

Certificate - Family and Consumer Sciences, PB

College of Agriculture and Environmental Science

Graduate Coordinator: Jane Walker

Email: walkerj@ncat.edu

Phone: 336-285-3633

Department Chair: Jane Walker

Email: walkerj@ncat.edu

Phone: 336-285-3633

The Certificate Program in Family and Consumer Sciences Education provides individuals with a strong foundation in teaching methods, classroom management, curriculum development, assessment, leadership, education technology, and content knowledge in family and consumer sciences. Graduates will accept positions as teachers at the middle and high school levels with content knowledge in family and consumer sciences. The certificate is especially designed for teachers in Jamaica who are committed to preparing students for family life, work life or for careers in family and consumer sciences.

Certificate Requirements

Total credit hours: 18

- Take 18 credit hours: FCS 641, 681, 682, 683, 701, 702, 734

Certificate - Marriage and Family Counseling, PB

College of Education

Graduate Coordinator: Patricia Bethea-Whitfield **Email:** betheap@ncat.edu **Phone:** (336) 285-4384

Department Chair: Caroline Booth **Email:** csbooth@ncat.edu **Phone:** (336) 285-4386

Additional Admission Requirements

- Available only as an add-on certificate to students admitted to the MS in Mental Health Counseling program at North Carolina A&T State University.

Program Requirements

Total credit hours: 12

- Take 9 credit hours: HDSV 754, 756, 774
- Select 3 credit hours from: HDSV 753, 757, 769

Certificate - Rehabilitation Counseling and Behavioral Addictions, PB

College of Education

Graduate Coordinator: Glacia Ethridge **Email:** gethridg@ncat.edu **Phone:** (336) 285-4391

Department Chair: Caroline Booth **Email:** csbooth@ncat.edu **Phone:** (336) 285-4386

The Certificate in Rehabilitation Counseling and Behavioral Addictions (RCBA) imparts specific knowledge and skills to its students that are required to effectively assist and counsel those who are impacted by behavioral addictions (i.e., alcohol and drugs, sexual addiction, eating disorders, criminal behaviors, and gambling). The specific emphasis on ethnic minorities serves to address the unique needs of these individuals, which may be overlooked or misunderstood during the treatment process. The RCBA Certificate has been approved by the North Carolina Substance Abuse Professional Practice Board (NCSAPPB) and meets the reduction in NCSAPPB requirements for the Licensed Clinical Addictions Specialist credential.

Additional Admission Requirements

- Available only as an add-on certificate to students admitted to the MS in Mental Health Counseling program at North Carolina A&T State University.

Certificate Requirements

Total credit hours: 12

- HDSV 716, 767, 768, 769

Certificate - Rehabilitation Psychology and Behavioral Medicine, PB

College of Education

Graduate Coordinator: Quintin Boston

Email: qboston@ncat.edu

Phone: (336) 285-4396

Department Chair: Caroline Booth

Email: csbooth@ncat.edu

Phone: (336) 285-4386

The Certificate Program in Rehabilitation Psychology and Behavioral Medicine prepares counselors who focus on the application of psychological knowledge and skills on behalf of individuals with disabilities and chronic health conditions in order to maximize health and welfare, independence, and functional abilities. The certificate also prepares specialists who are concerned with behavioral approaches relevant to the understanding of physical health and illness, and the application of disease prevention, health promotion, treatment, and rehabilitation. There is specific emphasis on the psychological impact of disability, types of assessment tools and procedures utilized to diagnose individuals with various psychological conditions, and the appropriate techniques utilized to treat individuals with psychopathological disorders.

Additional Admission Requirements

- Available only as an add-on certificate to students admitted to the MS in Mental Health Counseling program at North Carolina A&T State University.

Certificate Requirements

Total credit hours: 12

- HDSV 761, 768, 773, 778

Certificate - School Administration, PM

College of Education

Graduate Coordinator: Alisa Taliaferro

Email: astaliaf@ncat.edu

Phone: 336-334-7757

Department Chair: Alisa Taliaferro

Email: astaliaf@ncat.edu

Phone: 336-334-7757

The School Administration Endorsement Licensure Program is designed for individuals who currently hold a master's degree in an educational related field (Counseling, Curriculum & Instruction, Instructional Technology, etc.) and 3 years of teaching (or other professional education experience) or have been employed by an LEA as an assistant principal.

Additional Admission Requirements

- Earned master's degree in education (or education related field) from an accredited university
- Five years of successful teaching experiences (or educational-related experience).
- Three years of Adult Leadership experience (e.g. department chair, grade-level chair)
- NC Standard II Professional License
- Three official letters of recommendation, signed and sealed by the writer. One of the letters must be from current administrator (e.g. principal or assistant principal).
- Faculty Interview
- Electronic portfolio that includes evidence in the following areas:
 - Support for all students achieving high standards of learning
 - Accomplished classroom instruction, which shall include data providing evidence of two years of student growth and learning within the last 5 years
 - Significant leadership roles in past positions
 - Strong oral and written communication skills
 - Analytic abilities needed to collect and analyze data for student improvements
 - Demonstrated respect for family and community
 - Strong interpersonal skills
 - Knowledge of curriculum and instructional practices
- Written Statements -- please see College of Education website for writing prompts.
- A copy of most recent NC Teacher Evaluation (or its equivalent) with at a minimum rating of Accomplished in all standards.
- Current resume

Certificate Requirements

Total credit hours: 21

- Take 12 credit hours: MSA 773, 774, 776, 778,
- Internship Seminar: MSAL 789
- Internship Practicum: Take 6 credit hours: MSAL 784, 785
- Comprehensive Exam: MSA 788
- Earn a minimum rating of proficient on NCDPI (North Carolina Department of Public Instruction) School Executives Evidences

The field-based internship must be completed during the fall and spring semesters.

Certificate - Supply Chain Management, PB

College of Business and Economics

Graduate Coordinator: Roger J. Gagnon **Email:** gagnonr@ncat.edu **Phone:** 336-285-3291

Department Chair: Jakki Williams **Email:** jacq@ncat.edu **Phone:** 336-285-3405

The Graduate Certificate in Supply Chain Management provides professionals with the state-of-the-art knowledge necessary to design, manage, analyze, and update entire supply chain systems or various components within them. Graduates will be prepared to accept responsibility in supply chain management, purchasing, transportation or traffic management, warehousing, inventory management, and global supply chain management. The certificate is designed for professionals in transportation, logistics, manufacturing, insurance, food processing, hospitality, retailing, and government regulatory and transportation agencies.

Certificate Requirements

Total credit hours: 15

- TSCM 701, 720, 725, 727; MIS 713

Certificate - Vocational Evaluation and Work Adjustment, PB

College of Education

Graduate Coordinator: Paige Dunlap

Email: pdunlap@ncat.edu

Phone: (336) 285-4381

Department Chair: Caroline Booth

Email: csbooth@ncat.edu

Phone: (336) 285-4386

The Certificate in Vocational Evaluation and Work Adjustment (VEWA) prepares students to administer, score, and interpret a variety of Psychological, Cognitive, Intelligence, Aptitude, and Career tests, especially for persons with disabilities. The certificate also prepares specialists who focus on pre-employment and employment skill development along with reintegrating persons with disabilities into the community. The VEWA program prepares students to become board eligible to obtain national certification as a Professional Vocational Evaluator (PVE).

Additional Admission Requirements

- Available only as an add-on certificate to students admitted to the MS in Mental Health Counseling program at North Carolina A&T State University.

Program Requirements

Total credit hours: 12

- HDSV 771, 772, 776
- Select one course from: HDSV 752, 762, 777