

Course Name	Faculty Qualifications Needed	Related Disciplines	Acceptable Alternative Qualifications
AGSC 1200 Introduction to Plant Science (also, Dual Enrollment Q99 Section)	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Crop Science, Horticulture, Environmental Science, Plant Science, Agronomy	Acceptable alternative qualifications include substantial professional or academic experience in plant science or related agricultural fields, including crop production, horticultural practices, or natural resource conservation. Experience with sustainable agriculture, field-based research, or agricultural extension work will also be considered. Additional qualifications such as peer-reviewed publications, industry certifications, or presentations in agricultural sciences and conservation practices will further support alternative credentialing.
AGSC 1410 Introduction to Animal Science (also, Dual Enrollment Q99 Section)	Earned Master's or Doctorate degree in Agricultural Sciences or Animal Science in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Veterinary Science, Animal Husbandry, Agricultural Biology, Livestock Management	Acceptable alternative qualifications include substantial professional or academic experience in animal science, including livestock production, animal breeding, nutrition, or farm management. Experience with livestock adaptation, economic aspects of animal agriculture, and market-based livestock systems will also be considered. Additional credentials such as peer-reviewed publications, agricultural certifications, or work with agricultural extension services or livestock industry organizations will further support alternative credentialing.
AGSC 2010 Introduction to Agribusiness Economics	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Rural Economics, Environmental Economics, Farm Management, Agricultural Economics, Agribusiness, Economics	Acceptable alternative qualifications include substantial professional or academic experience in agricultural economics or agribusiness, particularly in areas such as farm management, economic policy, resource allocation, and the impact of international trade on agriculture. Experience with small farm economies, rural development, environmental policy, or agricultural trade analysis will also be considered. Additional qualifications such as peer-reviewed publications, presentations, or professional certifications in agribusiness, economic development, or agricultural finance will further support alternative credentialing.
AGSC 2020 Introduction of Agribusiness Management (Also, Dual Enrollment Q99 Section)	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Farm Management, Agricultural Finance, Business Management/Administration, Agribusiness, Agricultural Economics	Acceptable alternative qualifications include substantial professional or academic experience in agribusiness management, including expertise in marketing, forecasting, budgeting, capital investment, accounting, production systems, and human resource management in agricultural settings. Experience in managing or consulting for agricultural enterprises, rural business development, or agribusiness strategy, along with peer-reviewed publications or professional certifications (e.g., Agribusiness)
AGSC 2040 Research Bus Writing in Agriculture	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Agricultural Management, Business Writing, Science Agribusiness, Agricultural Economics, Economics, Agribusiness, Agricultural Education, Agricultural Communication	Acceptable alternative qualifications include substantial professional or academic experience in agricultural communication or agribusiness writing, including experience with research writing, data management, and statistical analysis in agricultural settings. Proficiency in decision-making tools and software applications commonly used in agribusiness, as well as experience teaching or producing professional agricultural reports, proposals, or technical documents, will also be considered. Additional qualifications such as industry certifications, peer-reviewed publications, or professional development in agri-communication and business writing strengthen alternative credentialing.
AGSC 2200 Fundamentals of Soil Science	Earned Master's or Doctorate degree in Agricultural Sciences; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Environmental Soil Chemistry, Natural Resources Management, Agricultural Engineering, Soil Science, Agronomy, Environmental Science	Acceptable alternative qualifications include substantial professional or academic experience in soil science, including expertise in soil formation, classification, structure, fertility, and soil conservation practices. Experience in research or extension services related to soil fertility management, environmental sustainability, or land resource planning will also be considered. Additional qualifications such as peer-reviewed publications, industry certifications (e.g., Certified Professional Soil Scientist), or conference presentations in soil and environmental sciences will further support alternative credentialing.
AGSC 2510 Fundamentals of Geospatial Information Systems	Earned Master's or Doctorate degree in Agricultural Sciences; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Remote Sensing, Environmental Engineering, Geospatial Science, Geographic Information Systems (GIS), Agricultural Engineering, Environmental Science	Acceptable alternative qualifications include substantial professional or academic experience in geospatial analysis or GIS, including proficiency in geospatial software (e.g., ArcGIS, QGIS), spatial data management, and geospatial visualization. Experience in interdisciplinary GIS applications (e.g., agriculture, urban planning, environmental monitoring) and hands-on teaching of GIS technology will also be considered. Additional qualifications such as peer-reviewed publications, GIS certifications (e.g., GISP), or documented GIS project work support alternative credentialing.

AGSC 3000 Agricultural Marketing (Also, Dual Enrollment Q99 Section)	Earned Master's or Doctorate degree in Agricultural Sciences; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Food and Resource Economics, Agricultural Business Management, Agricultural Economics, Agribusiness, Marketing	Acceptable alternative qualifications include substantial professional or academic experience in agricultural or food marketing, including expertise in supply chain management, price analysis, market structures, and consumer behavior in agricultural contexts. Experience in marketing strategy development for agricultural products, cooperative marketing, or commodity trading will also be considered. Additional credentials such as peer-reviewed publications, industry certifications (e.g., Certified Agricultural Marketing Professional), or presentations in agri-marketing conferences strengthen alternative credentialing.
AGSC 3010 Farm Production and Management (Also, Dual Enrollment Q99 Section)	Earned Master's or Doctorate degree in Agricultural Sciences; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Agricultural Operations, Resource Management, Agricultural Science, Agribusiness, Agricultural Economics, Farm Management	Acceptable alternative qualifications include substantial professional or academic experience in farm business planning, resource optimization, or agricultural production systems. Expertise in enterprise budgeting, economic decision-making in agriculture, or agricultural extension services will also be considered. Additional qualifications such as professional certifications (e.g., Accredited Farm Manager), peer-reviewed publications, or documented farm management consulting experience will further support alternative credentialing.
AGSC 3020 Food Economics	Earned Master's or Doctorate degree in Agricultural Sciences; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Food Policy, International Trade, Agribusiness, Agricultural Economics, Food and Resource Economics, Economics	Acceptable alternative qualifications include substantial professional or academic experience in food economics, including food price analysis, market channel evaluation, and economic impact on consumer and producer behavior. Experience with international agricultural trade, food supply chains, and policy analysis will also be considered. Additional qualifications such as peer-reviewed publications, economic consulting, or professional certifications in agricultural or food economics will further support alternative credentialing.
AGSC 3030 Environmental Resource Economics and Management	Earned Master's or Doctorate degree in Agricultural Science; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Sustainability Studies, Land Use Policy, Environmental Science, Environmental Economics, Agricultural Economics, Natural Resource Management in the teaching discipline	Acceptable alternative qualifications include substantial professional or academic experience in environmental or natural resource economics, including land and water resource management, property rights, environmental policy, and resource valuation. Experience in research, consulting, or policy development related to land use planning, population-resource interactions, or sustainable development will also be considered. Additional qualifications such as peer-reviewed publications, conference presentations, or professional certifications in environmental or agricultural resource management will further support alternative credentialing.
AGSC 3040 Agricultural Policy	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Rural Development, Agricultural Law, Environmental Policy, Agricultural Economics, Public Policy, Agribusiness	Acceptable alternative qualifications include substantial professional or academic experience in agricultural policy analysis, including expertise in government programs, regulatory frameworks, and rural policy issues. Experience with policy-making processes, economic impact assessments, and evaluation of agricultural legislation will also be considered. Additional qualifications such as peer-reviewed publications, professional involvement in agricultural policymaking, or certifications related to agricultural policy and public administration will further support alternative credentialing.
AGSC 3050 Foundations of Agricultural Ag & Extension Education (Also, Dual Enrollment Q99 Section)	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Education Leadership, Rural Sociology, Adult and Community Education, Agricultural Education, Extension Education, Agricultural Science in the teaching discipline	Acceptable alternative qualifications include substantial professional or academic experience in agricultural and extension education, including work with youth programs such as FFA and 4-H, adult education initiatives, or community-based agricultural training. Experience in developing and managing school-based ag education programs, SAE programs, and fostering school-community partnerships will also be considered. Additional qualifications such as peer-reviewed publications, extension service credentials, or certifications in agricultural teaching or adult education further support alternative credentialing.
AGSC 3060 Youth Leadership Experiences (Also, Dual Enrollment Q99 Section)	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Educational Leadership, Agricultural Leadership, Agricultural Education, Youth Development, Extension Education	Acceptable alternative qualifications include substantial professional or academic experience in youth leadership development, especially within school-based agricultural programs (e.g., FFA, 4-H), non-formal education, or community-based initiatives. Experience in strategic planning for youth organizations, leadership training, and experiential learning models such as SAE or service learning will also be considered. Additional qualifications such as peer-reviewed publications, leadership program certifications, or documented service in youth program coordination or extension services further support alternative credentialing.

AGSC 3070 Teaching and Learning Methods in Agriculture (Also, Dual Enrollment Q99 Section)	Earned Master's or Doctorate degree in Agricultural Sciences Education in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Instructional Design, Agricultural Education, Curriculum and Instruction	Acceptable alternative qualifications include substantial professional or academic experience in teaching agricultural subjects, curriculum development, or instructional methodology with a focus on creativity, classroom engagement, leadership development, and technical training. Experience in managing agricultural classrooms or laboratories, teacher training workshops, and educational program evaluation will also be considered. Additional qualifications such as teaching credentials, peer-reviewed publications, or professional development in pedagogy and agriculture education further support alternative credentialing.
AGSC 3080 Methods of Teaching Agri/Env/STEM (Also, Dual Enrollment Q99 Section)	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Environmental Science Education, Agricultural Engineering Education, Science Education, Agricultural Education, STEM Education, Curriculum and Instruction	Acceptable alternative qualifications include substantial professional or academic experience in teaching agricultural or environmental science, STEM education, or agriscience and ag engineering at the secondary or postsecondary level. Experience with curriculum development, laboratory instruction, program evaluation, and managing educational facilities and equipment will also be considered. Additional qualifications such as teaching licensure, instructional design credentials, peer-reviewed publications, or leadership in STEM or agricultural education programs further support alternative credentialing.
AGSC 3090 Introduction to Agricultural Engineering (Also, Dual Enrollment Q99 Section)	Earned Master's or Doctorate degree in Agricultural Sciences Agricultural Engineering, Agricultural Education, Industrial Technology in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Mechanized Agriculture, Agricultural Systems Technology, Engineering Technology	Acceptable alternative qualifications include substantial professional or academic experience in agricultural mechanics and engineering education, including instructional expertise in wiring, small engine repair, welding, and laboratory safety and maintenance. Experience managing and teaching in agricultural education laboratories, as well as certifications in agricultural mechanics or technical trades (e.g., welding certification, small engine technician), will also be considered. Peer-reviewed publications or leadership roles in ag mechanics education programs further support alternative credentialing.
AGSC 3110 Principles and Methods of Biotechnology II	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Microbiology, Biochemistry, Plant and Animal Genetics, Agricultural Biotechnology, Molecular Biology, Animal Science	Acceptable alternative qualifications include substantial professional or academic experience in agricultural biotechnology or molecular diagnostics, including hands-on experience with nucleic acid techniques, immunoassays, and instrumentation such as flow cytometry, electron microscopy, and spectroscopy. Experience in food safety, animal health diagnostics, or plant-microbe interactions in agricultural research or applied settings will also be considered. Additional qualifications such as peer-reviewed publications, technical certifications, or training in laboratory instrumentation further support alternative credentialing.
AGSC 3111 Introduction to Leadership: Practical Applications (Also, Dual Enrollment Q99 Section)	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Communication Studies, Human Development, Community Development, Leadership Studies, Agricultural Leadership, Educational Leadership, Organizational Development	Acceptable alternative qualifications include substantial professional or academic experience in leadership development, especially within agricultural, environmental, health, or education sectors. Expertise in personal and organizational leadership, communication, problem-solving, and change management is highly relevant. Additional qualifications such as peer-reviewed publications, leadership training certifications (e.g., Certified Professional in Learning and Performance, Leadership Coaching), or documented leadership roles in professional organizations will further support alternative credentialing.
AGSC 3112 Team Leadership (Also, Dual Enrollment Q99 Section)	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Organizational Psychology, Communication Studies, Human Resource Development, Leadership Studies, Organizational Leadership, Educational Leadership	Acceptable alternative qualifications include substantial professional or academic experience in team leadership, organizational behavior, or group dynamics. Demonstrated expertise in team formation, conflict resolution, effective communication, and performance enhancement is essential. Additional qualifications such as leadership coaching certifications, facilitation experience, peer-reviewed publications, or practical experience in managing high-performing teams in academic or industry settings will further support alternative credentialing.
AGSC 3120 Introduction to Applied Statistics I	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Quantitative Methods, Biostatistics, Data Science, Statistics, Applied Mathematics	Acceptable alternative qualifications include substantial professional or academic experience in applied statistics, including survey design, data analysis, probability distributions, and hypothesis testing. Proficiency in using statistical software for regression, correlation, ANOVA, and index number analysis is also relevant. Additional qualifications such as peer-reviewed publications, professional certifications (e.g., Certified Statistical Analyst), or experience teaching or applying statistical methods in agriculture, business, or health sciences will further support alternative credentialing.

AGSC 3130 Sample Survey Theory and Techniques	Earned Master's or Doctorate degree in Agricultural Sciences Statistics, Survey Methodology, Applied Mathematics in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Quantitative Research Methods, Biostatistics, Data Science	Acceptable alternative qualifications include substantial professional or academic experience in survey methodology, statistical sampling techniques, and data collection design. Expertise in questionnaire construction, sampling error analysis, probability distributions, and statistical software applications is essential. Additional qualifications such as peer-reviewed publications, professional certifications (e.g., Certified Survey Researcher), or experience managing survey research projects in academic, governmental, or industry settings will further support alternative credentialing.
AGSC 3185 Cooperative Education (Also, Dual Enrollment Q99 Section)	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Experiential Learning, Workforce Development, Educational Leadership, Agricultural Education, Career and Technical Education	Acceptable alternative qualifications include substantial professional or academic experience in coordinating cooperative education, internship programs, or work-based learning experiences related to agricultural sciences. Experience supervising students in applied learning settings, developing industry partnerships, and mentoring students through professional skill-building is relevant. Additional qualifications may include workforce training certifications, leadership in academic-industry collaboration, or peer-reviewed work on experiential learning models.
AGSC 3200 General Agricultural Botany	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Horticulture, Plant Biology, Environmental Science, Botany, Plant Science,	Acceptable alternative qualifications include substantial professional or academic experience in botanical sciences, particularly in areas related to plant physiology, taxonomy, or plant-environment interactions. Experience in agricultural applications of botany, research in plant biology, or development of instructional materials in plant science will also be considered. Additional qualifications such as peer-reviewed publications, certifications in botanical or plant science fields, or extension work related to plant education further support alternative credentialing.
AGSC 3210 Principles of Crop Science	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Soil Science, Horticulture, Crop Science, Agronomy, Plant Science/Physiology, Botany	Acceptable alternative qualifications include substantial professional or academic experience in agronomic crop production, plant-environment interactions, or crop distribution and adaptation. Practical experience in crop management, extension work, or agricultural consulting related to crop science will also be considered. Additional qualifications such as peer-reviewed research, professional certifications (e.g., Certified Crop Adviser), or involvement in field trials or agricultural sustainability initiatives further support alternative credentialing.
AGSC 3220 Soil and Environmental Chemistry	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Environmental Science, Agricultural Chemistry, Geosciences, Soil Science, Environmental Chemistry, Agronomy	Acceptable alternative qualifications include substantial professional or academic experience in soil chemistry, environmental pollution management, or water and soil remediation practices. Expertise in ion exchange processes, soil acidity, mineralogy, and pollutant abatement strategies is essential. Additional qualifications may include peer-reviewed publications, certifications in environmental or agricultural sciences (e.g., Certified Professional Soil Scientist), or applied research experience in environmental quality and soil health.
AGSC 3230 Soil Morphology and Classification	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Geology, Natural Resource Management, Agricultural Science, Soil Science, Agronomy, Environmental Science	Acceptable alternative qualifications include substantial professional or academic experience in soil classification systems, land evaluation, and field-based soil morphology. Experience with land judging, soil profile analysis, and USDA soil taxonomy is highly relevant. Additional qualifications such as certifications (e.g., Certified Professional Soil Scientist), field survey experience, and peer-reviewed publications or training in geospatial analysis and land use planning further support alternative credentialing.
AGSC 3240 Economic Entomology	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Integrated Pest Management, Plant Science, Environmental Biology, Entomology, Agricultural Science, Plant Protection	Acceptable alternative qualifications include substantial professional or academic experience in agricultural entomology, insect morphology and classification, and pest control strategies related to crop and plant health. Experience in integrated pest management (IPM), extension work, or agricultural consulting focused on insect-related crop impacts will also be considered. Additional qualifications such as certifications (e.g., Certified Crop Adviser with IPM focus), field experience in insect identification and control, or peer-reviewed publications in applied entomology further support alternative credentialing.

AGSC 3250 Farm Weeds and Their Control	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Crop Science, Environmental Science, Agricultural Science, Weed Science, Agronomy, Plant Science	Acceptable alternative qualifications include substantial professional or academic experience in weed identification, weed ecology, and weed control methods in agricultural systems. Experience with herbicide application, sustainable weed management practices, and the economic evaluation of weed impact on crops is relevant. Additional qualifications such as certifications (e.g., Certified Crop Adviser with a weed management focus), peer-reviewed publications, or applied extension work in weed science and field crop management further support alternative credentialing.
AGSC 3260 Plant Physiology	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Horticulture, Agricultural Science, Environmental Biology, Plant Physiology, Plant Science, Botany	Acceptable alternative qualifications include substantial professional or academic experience in plant physiological processes such as photosynthesis, transpiration, nutrient absorption, and respiration. Relevant research or teaching experience in seed plant biology, crop physiology, or applied plant nutrition is highly applicable. Additional qualifications such as peer-reviewed publications, certifications in plant or crop science, or practical experience in plant research or agricultural extension further support alternative credentialing.
AGSC 3300 Plant Pathology	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Crop Protection, Plant Biology, Environmental Science, Plant Pathology, Plant Science	Acceptable alternative qualifications include substantial professional or academic experience in plant disease diagnosis, pathology of regional crops, and development or implementation of disease control strategies. Experience with pathogen identification, integrated disease management, and extension work in agricultural disease prevention is relevant. Additional qualifications such as certifications (e.g., Certified Crop Adviser with a pathology focus), peer-reviewed publications, or applied research in plant disease resistance or fungal/bacterial control further support alternative credentialing.
AGSC 3320 Propagation of Horticultural Plants	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Botany, Crop Science, Nursery Management, Horticulture, Plant Science	Acceptable alternative qualifications include substantial professional or academic experience in plant propagation techniques such as seed propagation, cutting, grafting, and tissue culture of both ornamental and crop plants. Practical experience in horticultural production, nursery operations, or plant breeding programs is highly relevant. Additional qualifications such as industry certifications (e.g., Certified Horticulturist), peer-reviewed publications, or applied training in propagation practices further support alternative credentialing.
AGSC 3330 Floriculture	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Greenhouse Management, Ornamental Horticulture, Horticulture, Floriculture, Plant Science	Acceptable alternative qualifications include substantial professional or academic experience in greenhouse crop production, ornamental plant cultivation, or commercial floriculture practices. Experience with propagation, pest and disease management in greenhouse environments, or floral industry standards is highly applicable. Additional qualifications such as certifications (e.g., Certified Professional Horticulturist), peer-reviewed publications, or hands-on teaching in greenhouse or floriculture programs further support alternative credentialing.
AGSC 3340 Natural Resources and Management	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Forestry, Ecology, Environmental Policy, Natural Resource Management, Environmental Science	Acceptable alternative qualifications include substantial professional or academic experience in natural resource conservation, land and water management, or sustainable agriculture. Experience with environmental planning, resource assessment, or ecosystem management is relevant. Additional qualifications such as certifications (e.g., Certified Environmental Professional), leadership in conservation projects, or publications in natural resource policy or sustainability further support alternative credentialing.
AGSC 3350 Drone Pilot Training	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Remote Sensing, Precision Agriculture, Environmental Technology, Agricultural Engineering, Aviation Science, Geographic Information Systems (GIS)	Acceptable alternative qualifications include FAA-certified Remote Pilot (Part 107) credentials combined with substantial professional experience in drone operations, mapping, or agricultural drone applications. Experience with drone-based data collection, geospatial mapping, sensor integration, and teaching drone safety and regulations is highly relevant. Additional qualifications such as hands-on training in drone software, peer-reviewed publications on drone usage in agriculture, and instructional experience in UAV technologies further support alternative credentialing.

AGSC 3400 Animal Breeding and Genetics	Earned Master's or Doctorate degree in Agricultural Sciences Animal Science, Genetics, Agricultural Science in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Livestock Management, Biotechnology, Reproductive Physiology	Acceptable alternative qualifications include substantial professional or academic experience in livestock genetics, animal breeding systems, or genetic evaluation methods. Relevant experience includes working with heritability estimation, heterosis utilization, gene frequency analysis, and progeny testing in breeding programs. Additional qualifications such as certifications (e.g., Certified Animal Breeder), contributions to livestock genetic research, and peer-reviewed publications in animal genetics or breeding further support alternative credentialing.
AGSC 3410 Anatomy and Physiology of Domestic Animals	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Veterinary Medicine, Physiology, Animal Science, Veterinary Science	Acceptable alternative qualifications include substantial professional or academic experience in the anatomy and physiology of livestock, including practical applications to animal health and management. Relevant experience may include veterinary practice, livestock care and treatment, or teaching animal anatomy and physiology. Additional qualifications such as licensure as a Doctor of Veterinary Medicine (DVM), professional certifications, or peer-reviewed research in animal health and physiology further support alternative credentialing.
AGSC 3420 Feeds and Ration Formulation	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Livestock Production, Feed Science, Veterinary Nutrition, Animal Nutrition, Animal Science	Acceptable alternative qualifications include substantial professional or academic experience in livestock nutrition, ration formulation, feed analysis, and the use of feeding standards. Relevant experience includes work in feed formulation software, nutrition consulting, extension services, or livestock dietary planning. Additional qualifications such as certifications (e.g., Professional Animal Scientist – PAS in Nutrition), industry experience in feed manufacturing, or peer-reviewed publications in animal nutrition further support alternative credentialing.
AGSC 3430 Animal Health and Disease Prevention	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Veterinary Medicine, Livestock Management, Animal Health, Agricultural Science, Animal Science, Veterinary Science	Acceptable alternative qualifications include substantial professional or academic experience in animal health management, including diagnosis, treatment, and prevention of livestock and poultry diseases. Relevant experience may include work as a licensed veterinarian, livestock health specialist, or extension agent with expertise in animal disease control. Additional qualifications such as a Doctor of Veterinary Medicine (DVM), certifications in animal health or biosecurity, and peer-reviewed publications in veterinary sciences or animal health further support alternative credentialing.
AGSC 3440 Swine Production and Management	Earned Master's or Doctorate degree in Agricultural Sciences Animal Science, Swine Production, Agricultural Science in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Livestock Production, Meat Science, Veterinary Science	Acceptable alternative qualifications include substantial professional or academic experience in swine breeding, nutrition, herd health, or commercial swine operations. Relevant experience may include work in swine genetics, feed formulation for pigs, or production system management. Additional qualifications such as certifications (e.g., Pork Quality Assurance Plus), hands-on industry experience, or peer-reviewed publications in swine production and management further support alternative credentialing.
AGSC 3450 Beef Production and Management	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Livestock Management, Ruminant Nutrition, Veterinary Science, Animal Science, Beef Cattle Production	Acceptable alternative qualifications include substantial professional or academic experience in beef cattle production systems, including breeding, herd health, feeding practices, and disease control. Relevant experience may include managing commercial or purebred herds, working in extension services, or consulting in the beef industry. Additional qualifications such as certifications (e.g., Beef Quality Assurance – BQA), industry experience in herd performance programs, or peer-reviewed publications in beef production further support alternative credentialing.
AGSC 3500 Principle of Food Science and Technology	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Nutrition Science, Food Engineering, Agricultural Processing, Food Science, Food Technology, Biotechnology	Acceptable alternative qualifications include substantial professional or academic experience in food processing, food safety, or food quality control. Relevant experience may include roles in food manufacturing, regulatory compliance (e.g., FDA or USDA), or research in food preservation and packaging. Additional qualifications such as certifications (e.g., HACCP, Certified Food Scientist – CFS), work in food industry automation, or peer-reviewed publications in food technology or nutrition science further support alternative credentialing.

AGSC 3510 Food Processing	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Dairy Technology, Food Microbiology, Food Engineering, Food Science	Acceptable alternative qualifications include substantial professional or academic experience in food or dairy processing, including expertise in milk procurement, pasteurization, and food safety standards. Relevant experience may include working in dairy plant operations, quality control, or regulatory compliance in the dairy industry. Additional qualifications such as certifications (e.g., HACCP, Certified Food Scientist – CFS), hands-on industry experience, or peer-reviewed publications in dairy processing or food microbiology further support alternative credentialing.
AGSC 3520 Processing Poultry Products	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Meat Science, Food Safety, Agricultural Processing, Poultry Science, Animal Science, Food Science	Acceptable alternative qualifications include substantial professional or academic experience in poultry production and processing, including expertise in grading, preservation, storage, and plant operations. Relevant experience may include managing poultry processing facilities, conducting food safety inspections, or working in regulatory compliance. Additional qualifications such as HACCP certification, experience with USDA poultry grading standards, or peer-reviewed publications in poultry or food processing further support alternative credentialing.
AGSC 3530 Food Microbiology	Earned Master's or Doctorate degree in Agricultural Sciences or Agricultural Engineering in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Biological Sciences, Food Safety, Microbiology, Food Science	Acceptable alternative qualifications include substantial professional or academic experience in food microbiology, including expertise in foodborne pathogens, spoilage organisms, and microbial quality control. Relevant experience may include working in food safety laboratories, quality assurance roles in the food industry, or regulatory agencies. Additional qualifications such as HACCP certification, Certified Food Scientist (CFS), or peer-reviewed publications in food microbiology or microbial safety of food products further support alternative credentialing.
AGSC 3540 Laboratory Instrumentation	Earned Master's or Doctorate degree in Agricultural Sciences or Agricultural Engineering in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Biochemistry, Food Science, Biological Sciences, Biotechnology	Acceptable alternative qualifications include substantial professional or academic experience in laboratory analysis involving biological materials, including hands-on expertise in spectroscopy, chromatography, and electrophoresis techniques. Relevant experience may include work in research laboratories, quality control in food or pharmaceutical industries, or academic teaching with a focus on laboratory instrumentation. Certifications in laboratory safety or instrumentation (e.g., GC-MS, HPLC, or ISO lab standards), or peer-reviewed publications in related analytical techniques further support alternative credentialing.
AGSC 3550 Global Positioning Systems	Earned Master's or Doctorate degree in Agricultural Sciences or Agricultural Engineering in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Environmental Science, Remote Sensing, Precision Agriculture, Geospatial Science, Geographic Information Systems (GIS)	Acceptable alternative qualifications include substantial professional or academic experience in GPS technology, navigation systems, and geospatial data integration. Relevant experience may include work in GIS/GPS applications in agriculture, environmental monitoring, or engineering fields. Certifications such as GIS Professional (GISP), Esri Technical Certification, or FAA Remote Pilot Certification, along with peer-reviewed publications or technical reports in GPS applications, support alternative credentialing.
AGSC 3560 Spatial Analysis	Earned Master's or Doctorate degree in Agricultural Sciences Agricultural Engineering, Geospatial Science, Geographic Information Systems (GIS), Environmental Science in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Remote Sensing, Urban Planning, Environmental Engineering	Acceptable alternative qualifications include substantial professional or academic experience in spatial analysis and GIS applications, including expertise in geospatial modeling, raster/vector data processing, and spatial problem-solving. Relevant experience may include work in land-use planning, environmental impact analysis, or precision agriculture. Certifications such as GIS Professional (GISP), Esri Technical Certification, or documented spatial analysis projects and publications further support alternative credentialing.
AGSC 3570 Geospatial Metadata	Earned Master's or Doctorate degree in Agricultural Sciences or Agricultural Engineering in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Information Science, Geoinformatics, Environmental Data Management, Geographic Information Systems (GIS), Geospatial Science	Acceptable alternative qualifications include substantial professional or academic experience in geospatial data management, metadata standards, and GIS documentation practices. Relevant experience may include work with federal or state agencies adhering to FGDC metadata standards, contributions to national spatial data infrastructure (NSDI) initiatives, or participation in large-scale GIS data cataloging projects. Certifications such as GIS Professional (GISP), Esri Technical Certification, or specialized training in metadata creation and compliance further support alternative credentialing.

AGSC 3580 Introduction to GIS for Natural Resources	Earned Master's or Doctorate degree in Agricultural Sciences or Agricultural Engineering in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Forestry, Geospatial Science, Environmental Management, Geographic Information Systems (GIS), Natural Resource Management	Acceptable alternative qualifications include substantial professional or academic experience in applying GIS technologies to natural resource management, including experience in spatial analysis, environmental modeling, and geospatial data visualization. Relevant experience may include field-based GIS work for land use, forestry, water resources, or conservation planning. Certifications such as GIS Professional (GISP), Esri Technical Certification, or documented GIS project experience with natural resource organizations further support alternative credentialing.
AGSC 3590 Spatial Landscape Design and Analysis	Earned Master's or Doctorate degree in Agricultural Sciences or Agricultural Engineering in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Urban Planning, Environmental Science, Geographic Information Systems (GIS), Landscape Architecture, Geospatial Science, Environmental Design	Acceptable alternative qualifications include substantial professional experience in landscape architecture, spatial design, or GIS-based environmental planning. Relevant experience may include the integration of CAD, GPS, and GIS technologies in design projects, environmental impact assessments, and land-use planning. Certifications such as GIS Professional (GISP), Esri Technical Certification, or licensure in Landscape Architecture (PLA), along with portfolios or publications in spatial landscape design, will also be considered for alternative credentialing.
AGSC 3600 Image Analysis and Remote Sensing	Earned Master's or Doctorate degree in Agricultural Sciences or Agricultural Engineering in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Geographic Information Systems (GIS), Earth Science, Environmental Engineering, Remote Sensing, Geospatial Science	Acceptable alternative qualifications include substantial professional or academic experience in remote sensing, satellite imagery interpretation, or geospatial image analysis. Relevant experience may include work in environmental monitoring, agricultural land use analysis, or defense and intelligence applications. Certifications such as GIS Professional (GISP), Esri Technical Certification in Imagery Analysis, or documented projects and publications involving remote sensing tools and methodologies will also be considered for alternative credentialing.
AGSC 3601 Companion Animal Management	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Veterinary Technology, Animal Behavior, Zoology, Agricultural Science, Animal Science, Veterinary Science, Animal Health Management	Acceptable alternative qualifications include substantial professional experience in companion animal care, veterinary services, or animal behavior and nutrition. Relevant experience may include clinical practice with small animals, therapeutic animal programs, animal welfare work, or professional certifications such as Certified Veterinary Technician (CVT), Licensed Veterinary Medical Technician (LVMT), or Fear Free Certification. Publications, workshops, or public outreach in companion animal health and management will also be considered.
AGSC 3690 Principles of Food Engineering and Processing	Earned Master's or Doctorate degree in Agricultural Sciences or Agricultural Engineering in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Biological Engineering, Chemical Engineering, Food Technology, Food Engineering, Food Science	Acceptable alternative qualifications include substantial professional or academic experience in food process engineering, including experience with mass and energy balance, transport phenomena in food systems, and advanced food processing technologies. Relevant certifications such as Certified Food Scientist (CFS), experience with food industry processing systems, and scholarly work (e.g., publications or technical reports in food engineering and processing) will also be considered for alternative credentialing.
AGSC 4010 Agricultural Finance	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Rural Finance Agricultural Business, Agricultural Economics, Finance/Economics	Acceptable alternative qualifications include substantial professional experience in agricultural finance, agribusiness financial planning, or rural credit institutions. Relevant certifications such as Chartered Financial Analyst (CFA), Accredited Farm Manager (AFM), or Certified Agricultural Consultant (CAC), along with publications or professional work in farm lending, risk management, or capital markets specific to agriculture, will also be considered.
AGSC 4020 Quantitative Techniques in Decision Making	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Operations Research, Business Analytics, Quantitative Methods, Agricultural Economics, Applied Economics, Agribusiness, Finance/Economics	Acceptable alternative qualifications include substantial professional experience applying quantitative tools to decision-making in agribusiness or agricultural policy. Expertise in input-output modeling, benefit-cost analysis, or supply-demand forecasting, along with relevant certifications such as Certified Business Economist (CBE) or experience in applied economic research, modeling, or policy analysis, will also be considered.
AGSC 4040 World Agriculture (Also, Dual Enrollment Q99 Section)	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Development Economics, Global Agriculture, International Agricultural Policy, Agricultural Economics, International Development, Agribusiness, Finance/Economics	Acceptable alternative qualifications include substantial professional experience in international agriculture, rural development, or global food systems. Experience working in or conducting research on agricultural development in lesser-developed countries, especially in Africa, along with relevant certifications (e.g., International Development Certification, Agricultural Policy Analysis) and scholarly contributions through publications or field projects will also be considered.

AGSC 4070 Agricultural Special Problems	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Plant Science, Soil Science, Animal Science, Agricultural Science, Agronomy	Acceptable alternative qualifications include substantial professional or research experience in agricultural sciences, including laboratory or field-based investigations. Evidence of published research, technical reports, or extension service projects, along with relevant certifications (e.g., Certified Crop Advisor, Certified Professional Agronomist), will also be considered.
AGSC 4080 Experimental Design	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Applied Statistics, Agricultural Research Methods, Biostatistics, Agricultural Statistics, Biostatistics	Acceptable alternative qualifications include extensive professional or academic experience in designing agricultural experiments and conducting statistical analysis using various research methods. Evidence of published research, statistical consulting, or technical reporting in agricultural or biological sciences, along with certifications such as SAS Certified Statistical Business Analyst or equivalent, will also be considered.
AGSC 4090 Community Development	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Rural Development, Agricultural Extension, Sustainable Development, Agricultural Science, Community Development, Rural Sociology, Agricultural Economics	Acceptable alternative qualifications include substantial professional experience in rural or community development programs, policy planning, or agricultural extension. Demonstrated leadership in community-based projects, published reports or studies on rural economics or development, and relevant certifications such as Certified Community Development Practitioner (CCDP) or equivalent will also be considered.
AGSC 4100 Organization and Contemporary Issues Facing Agriculture Firms	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Business Management, Agricultural Policy, Environmental Studies, Agribusiness, Agricultural Economics, Agricultural Management	Acceptable alternative qualifications include substantial professional experience in managing agribusiness operations or consulting on agricultural organizational strategy. Contributions through research or publications on agricultural policy, sustainability, or organizational structure in agriculture, and professional certifications such as Certified Agricultural Consultant (CAC) or Certified Agribusiness Manager (CAM) will also be considered.
AGSC 4210 Soil Physics	Earned Master's or Doctorate degree in Agricultural Sciences or Agricultural Engineering in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Soil/Water Science, Environmental Physics, Geoscience, Environmental Science	Acceptable alternative qualifications include substantial professional experience in soil physical analysis, water movement modeling, or environmental field research. Notable scholarly work such as publications in soil physics or related environmental studies, and professional certifications such as Certified Professional Soil Scientist (CPSS) or equivalent will also be considered.
AGSC 4220 Advanced Soil Fertility	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Plant/Soil Science, Crop Science, Environmental Agronomy, Agronomy, Environmental Science	Acceptable alternative qualifications include substantial professional experience in soil fertility management, plant nutrition, or agronomic consulting. Professional certifications such as Certified Crop Adviser (CCA) or Certified Professional Agronomist (CPAg), along with scholarly publications or conference presentations related to nutrient management and soil-plant interactions, will also be considered.
AGSC 4230 Soil and Water Conservation and Management	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Agronomy, Natural Resources Management, Environmental Engineering, Soil Science, Environmental Science, Agricultural Engineering	Acceptable alternative qualifications include substantial professional experience in soil and water conservation, sustainable land management, or agricultural resource planning. Professional certifications such as Certified Professional in Erosion and Sediment Control (CPESC), Certified Professional Soil Scientist (CPSS), or relevant publications and applied research in soil productivity and conservation practices will also be considered.
AGSC 4240 Turf Management	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Agronomy, Environmental Horticulture, Landscape Management, Agricultural Science, Turfgrass Science, Horticulture, Plant/Soil Science	Acceptable alternative qualifications include significant professional experience in turfgrass or landscape management, including roles in golf course maintenance, sports turf management, or lawn care industries. Professional certifications such as Certified Sports Field Manager (CSFM) or Certified Grounds Manager (CGM), and documented expertise in soil preparation, fertilization, irrigation systems, and turf disease management will also be considered.
AGSC 4250 Floral Design	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Agricultural Education, Environmental Horticulture, Landscape Design, Agricultural Science, Horticulture, Floriculture, Plant/Soil Science	Acceptable alternative qualifications include significant professional experience in floral design, horticulture, or event planning with an emphasis on flower arrangement. Recognized certifications such as AIFD (American Institute of Floral Designers) accreditation or equivalent professional training in floral arts, along with a portfolio of floral design work, teaching experience, or contributions to industry publications or exhibitions, will also be considered.

AGSC 4260 Greenhouse Operation and Management	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Environmental Horticulture, Agricultural Education, Floriculture, Agricultural Science, Horticulture, Greenhouse Management, Plant Science, Agribusiness	Acceptable alternative qualifications include substantial professional experience in greenhouse operation and ornamental plant production. Relevant certifications (e.g., Certified Professional Horticulturist), documented experience in managing greenhouse facilities, teaching or training in greenhouse techniques, or contributions to professional organizations, publications, or workshops in greenhouse production or plant care are also acceptable.
AGSC 4280 Food Safety and Quality Assurance	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Microbiology, Public Health, Agricultural Science, Food Science, Food Safety, Food Technology	Acceptable alternative qualifications include extensive professional experience in the food industry focused on safety and quality assurance, including HACCP implementation, food safety auditing, or regulatory compliance. Relevant certifications such as Certified Professional – Food Safety (CP-FS), HACCP certification, or Preventive Controls Qualified Individual (PCQI) are acceptable. Scholarly contributions such as publications or presentations in the areas of food safety, food microbiology, or sensory evaluation also qualify.
AGSC 4310 Plant Breeding	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Genetics, Horticulture, Agricultural Science, Plant Science, Plant Genetics, Crop Science	Acceptable alternative qualifications include significant professional experience in plant breeding or crop improvement, including work in agricultural research institutions or seed companies. Certifications or training in genetic analysis, molecular breeding techniques, or biotechnology applications in plant improvement are also acceptable. Scholarly activities such as peer-reviewed publications, plant variety development, or conference presentations in the field of plant genetics and breeding may also qualify.
AGSC 4410 Dairy Production and Management	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Veterinary Science, Livestock Management, Animal Science, Dairy Science	Acceptable alternative qualifications include extensive professional experience in dairy farming or livestock production, including herd management, nutrition planning, or facility design. Experience in breeding and disease control programs, certifications in dairy management or veterinary health, and scholarly contributions such as published articles or presentations on dairy science practices will also be considered.
AGSC 4420 Poultry Disease Prevention and Sanitation	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Avian Health, Animal Health and Sanitation, Poultry Science, Animal Science, Veterinary Science	Acceptable alternative qualifications include substantial professional experience in poultry health management, biosecurity practices, and farm sanitation procedures. Relevant certifications such as Poultry Health Professional (PHP), experience with poultry disease control programs, or scholarly contributions such as research publications, presentations, or industry-led training in poultry disease prevention and sanitation may also be considered.
AGSC 4430 Animal Nutrition	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Livestock Nutrition, Animal Science/Nutrition, Veterinary Science	Acceptable alternative qualifications include extensive professional experience in animal nutrition research, livestock feed formulation, or clinical veterinary nutrition. Relevant professional certifications (e.g., Board Certification in Animal Nutrition, membership in the American Society of Animal Science), industry training in metabolic nutrition, or notable scholarly publications or presentations in animal nutrition may also qualify.
AGSC 4440 Physiology of Reproduction	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Animal Reproduction, Livestock Physiology, Animal Science, Reproductive Physiology, Veterinary Science	Acceptable alternative qualifications include substantial professional experience in animal reproductive science, veterinary reproductive health, or applied livestock breeding programs. Relevant certifications (e.g., American College of Theriogenologists certification), and scholarly contributions such as research publications or conference presentations in reproductive physiology or animal science will also be considered.
AGSC 4450 Science of Meat	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Food Science, Agricultural Sciences, Animal Science	Acceptable alternative qualifications include extensive professional experience in meat science or food processing industries, including expertise in meat composition analysis, biochemical changes during meat processing, and quality control. Relevant certifications (e.g., Certified Meat Scientist, HACCP Certification), as well as scholarly work such as peer-reviewed publications or industry presentations in meat science or food technology, will also be considered.
AGSC 4460 Food Chemistry	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Food Science, Food Chemistry, Nutritional Sciences	Acceptable alternative qualifications include significant professional experience in food product development, food chemistry, or quality assurance in the food industry. Relevant certifications (e.g., Certified Food Scientist, HACCP, or SQF certifications), research publications, and industry presentations related to the chemical composition and functionality of food components (proteins, fats, carbohydrates, etc.) will also be considered.

AGSC 4500 Senior Project	Earned Master's or Doctorate degree in Agricultural Sciences; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Plant Science, Animal Science, Agricultural Economics, Environmental Science, Agricultural Engineering	Acceptable alternative qualifications include substantial experience supervising undergraduate research in agricultural sciences, professional publications or presentations in agriculture-related research, or applied research experience in agricultural industry settings. Faculty with a strong record in mentoring student research, proposal writing, data analysis, and project presentation in agricultural sciences will also be considered.
AGSC 4510 Geospatial Applications in Pest Management	Earned Master's or Doctorate degree in Agricultural Sciences or Agricultural Engineering in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Geographic Information Systems (GIS), Crop Science, Plant Protection, Environmental Science, Agricultural Sciences, Entomology, Geospatial Science	Acceptable alternative qualifications include extensive professional experience in pest management and geospatial applications, including the use of GIS tools for monitoring and controlling pests, diseases, and weeds in agriculture. Relevant professional certifications (e.g., Certified Crop Adviser, GIS Professional Certification), applied research, and scholarly publications in geospatial pest management or integrated pest management (IPM) will also be considered.
AGSC 4520 Spatial Analysis in Biosecurity and Risk Assessment	Earned Master's or Doctorate degree in Agricultural Sciences or Agricultural Engineering in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Geographic Information Systems (GIS), Biosecurity, Disaster Management, Public Health, Agricultural Sciences, Geospatial Science	Acceptable alternative qualifications include extensive professional experience in biosecurity, disaster risk assessment, or GIS-based hazard analysis. Professional certifications such as GIS Professional (GISP), Certified Emergency Manager (CEM), or Homeland Security certifications, as well as research or publications in spatial analysis for biohazard monitoring and risk mitigation, will also be considered.
AGSC 4530 Spatial Database Design and Management	Earned Master's or Doctorate degree in Agricultural Sciences or Agricultural Engineering in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Computer Science, Environmental Informatics, Spatial Data Management, Geospatial Science, Geographic Information Systems (GIS), Data Science	Acceptable alternative qualifications include significant professional experience in spatial database development or GIS systems, demonstrated by roles in GIS database architecture, data engineering, or geoinformatics. Relevant certifications such as Esri ArcGIS Desktop Professional, Certified GIS Professional (GISP), or equivalent experience in managing geospatial data systems and producing GIS-based solutions will also be considered.
AGSC 4540 Geospatial Information Systems Application and Design	Earned Master's or Doctorate degree in Agricultural Sciences or Agricultural Engineering in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Remote Sensing, Environmental Planning, Spatial Data Analytics, Geospatial Science, Geographic Information Systems (GIS), Environmental Science	Acceptable alternative qualifications include extensive professional experience in GIS application design, geospatial project management, or environmental informatics. Recognized certifications such as GIS Professional (GISP), Esri ArcGIS Enterprise Administration, or demonstrated leadership in GIS implementation projects and geospatial system development will also be considered. Experience with project proposal development, cost-benefit analysis, and delivery of geospatial solutions is preferred.
AGSC 4550 Temporal Analysis of Spatial Information	Earned Master's or Doctorate degree in Agricultural Sciences or Agricultural Engineering in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Remote Sensing, Spatial Data Analytics, Environmental Informatics, Geospatial Science, Geographic Information Systems (GIS), Data Science	Acceptable alternative qualifications include extensive professional experience in temporal-spatial analysis, predictive modeling, or environmental data analysis. Relevant certifications such as GIS Professional (GISP), Esri Spatial and Temporal Analyst credentials, or documented work in time-series modeling in spatial contexts may also be considered. Demonstrated contributions in research or industry applications involving spatial prediction and temporal trend analysis will support alternative credentialing.
AGSC 4560 Practicum in GIS	Earned Master's or Doctorate degree in Agricultural Sciences or Agricultural Engineering in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Geographic Information Science (GIS), Environmental Informatics, Spatial Data Science, Agricultural Science, Geospatial Science, Environmental Science	Acceptable alternative qualifications include substantial professional experience in GIS project management, applied geospatial analysis, or environmental mapping. Industry-recognized certifications such as GIS Professional (GISP), Esri Technical Certifications, or documented experience leading real-world GIS applications and consulting projects are also considered acceptable. Contributions such as GIS-based publications, professional reports, or client-delivered solutions further strengthen alternative credentialing.
AGSC 4710 Seminar	Earned Master's or Doctorate degree in Agricultural Sciences or Agricultural Engineering in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Agricultural Education, Environmental Science, Horticulture, Agronomy	Acceptable alternative qualifications include substantial professional experience in agricultural research, extension education, or industry leadership. This can include conference presentations, published scholarly or industry articles, experience organizing or leading scientific seminars or workshops, and contributions to curriculum development in agricultural sciences. Professional certifications or service in leadership roles in agricultural organizations may also be considered.

NURFS 2300 Introduction to Food and Culture	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Public Health Nutrition, Culinary Arts, Food Systems, Nutrition, Food Science	Acceptable alternative qualifications include substantial professional experience in food culture, community nutrition, or global food systems, including published research, professional presentations, or significant fieldwork. Experience in cross-cultural food practices, international nutrition policy, or teaching food and cultural diversity courses, as well as certifications (e.g., Certified Nutrition Specialist or Registered Dietitian with cultural focus), may also be considered.
NUFS 1010 Food Handling Sanitation	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Culinary Science, Hospitality Management, Environmental Health, Agricultural Science, Food Science, Nutrition, Public Health	Acceptable alternative qualifications include extensive professional experience in food safety, sanitation, or hospitality operations; certification in ServSafe or HACCP; experience teaching or training in food handling and hygiene practices; and contributions to food safety protocols or publications. Relevant licensure or professional certifications in food protection or environmental health will also be considered.
AGSC 4630/5630 Gene Editing with CRISPR-Cas9	Earned Master's or Doctorate degree in Agricultural Science in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Genetics, Plant Science, Animal Science, Bioinformatics, Biotechnology, Molecular Biology	Acceptable alternative qualifications include extensive professional or research experience in genome editing or CRISPR-Cas9 technologies, publications in peer-reviewed journals related to molecular genetics or biotechnology, hands-on laboratory instruction in gene editing techniques, and relevant certifications or patents in agricultural or biomedical applications of genetic engineering. Experience in ethical, regulatory, or industrial implementation of gene editing in agriculture or life sciences will also be considered.
AGSC 2100 Introduction to Agricultural Communications (Also, Dual Enrollment Q99 Section)	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Media Studies, Agricultural Communication, Mass Communication,	Acceptable alternative qualifications include substantial professional experience in agricultural journalism, public relations, or media production related to agriculture. Evidence such as published communication work, development of outreach/media campaigns, or teaching experience in agricultural communication or media studies may be considered. Relevant professional certifications or notable scholarly publications in agricultural communication or media strategy will also be accepted.
AGSC 4555 Principles of Organic Agriculture	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Environmental Science, Horticulture, Agricultural Science, Agronomy, Sustainable Agriculture, Plant/ Soil Science	Acceptable alternative qualifications include significant professional experience in organic farming, sustainable agriculture practices, or crop science, supported by certifications (e.g., Certified Crop Adviser, Organic Certification), publications, or involvement in organic production systems. Documented experience designing or managing certified organic operations or delivering educational content in organic agriculture will also be considered.
AGSC 1600 Introductory Biotechnology	Earned Master's or Doctorate degree in Agricultural Sciences or Agricultural Engineering in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Genetics, Biochemistry, Biotechnology, Molecular Biology,	Acceptable alternative qualifications include substantial professional experience in the field of biotechnology or molecular biology, such as research experience in genetic engineering, gene editing, or laboratory-based agricultural biotechnology. Recognized certifications (e.g., Molecular Biology Certification, Agricultural Biotechnology training), patents, scholarly publications, or presentations in biotechnology-related fields may also be considered.
AGSC 2400 Fundamentals of Envir Science	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Ecology, Natural Resource Management, Environmental Science/Studies, Ecology, Sustainability Science	Acceptable alternative qualifications include substantial professional experience in environmental science, including environmental impact assessment, ecological monitoring, or sustainability practices. Relevant certifications (e.g., Certified Environmental Scientist, LEED Accreditation), published research, technical reports, or conference presentations in environmental science, sustainability, or resource management will also be considered.
AGSC 2401 Fundamentals of Envir Sci II	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Ecology, Natural Resource Management, Environmental Science/Studies, Ecology, Sustainability Science	Acceptable alternative qualifications include significant professional experience in environmental policy, sustainability initiatives, or ecosystem analysis. Relevant certifications (e.g., Certified Ecologist, Environmental Professional Certification), applied research, technical publications, or environmental consulting work demonstrating expertise in environmental systems and sustainability may also qualify under alternative credentialing.

AGSC 3109 Prin and Methods of Biotech I	Earned Master's or Doctorate degree in Agricultural Sciences or Agricultural Engineering in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Genetics, Biochemistry, Biotechnology, Molecular Biology,	Acceptable alternative qualifications include substantial professional experience in biotechnology research or industry, including expertise in molecular techniques, genetic engineering, and laboratory-based research. Relevant certifications (e.g., Molecular Biology Certification, Agricultural Biotechnology credentials), peer-reviewed publications, or technical reports demonstrating applied work in plant or animal biotech will also be considered under alternative credentialing guidelines.
AGSC 4270 Biosecurity and Bioforensics	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Biotechnology, Biosecurity, Forensic Science	Acceptable alternative qualifications include significant professional experience in biosecurity, forensic analysis, or related agricultural biosafety applications. Industry certifications (e.g., Certified Forensic Analyst, Biosecurity Professional Credentials), government or military experience in agricultural threat analysis, or substantial scholarly work (e.g., publications, technical reports, or presentations) related to bioforensics, agroterrorism, or biothreat mitigation will be considered.
AGSC 4320 Wetlands Ecology and Mgmt	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Soil Science, Hydrology, Wildlife Biology, Environmental Science, Ecology, Natural Resources Management	Acceptable alternative qualifications include extensive professional experience in wetland conservation, habitat restoration, or ecological monitoring. Work with government agencies (e.g., EPA, USDA), non-profits, or environmental consulting firms, as well as relevant certifications (e.g., Professional Wetland Scientist), and scholarly contributions such as wetland-related research, fieldwork, or published articles in ecological journals will also be considered.
AGSC 4340 Cell and Tissue Culture	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Molecular Biology, Plant Physiology, Plant Science, Biotechnology, Cell Biology	Acceptable alternative qualifications include substantial professional experience in plant or animal cell culture techniques, laboratory-based biotechnology research, and applications in genetic engineering or propagation. Experience with cell culture laboratories in industry or academic settings, contributions to scientific publications or patents, and relevant certifications or training in molecular techniques and tissue culture systems will also be considered.
AGSC 4380 Industrial & Environ Biotech	Earned Master's or Doctorate degree in Agricultural Sciences or Agricultural Engineering in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Microbial Biotechnology, Bioprocess Engineering, Environmental Engineering, Environmental Science, Industrial Biotechnology	Acceptable alternative qualifications include substantial professional experience in industrial or environmental biotechnology, including experience in bioremediation, fermentation technology, biofuel production, or wastewater treatment using biological systems. Contributions to research or publications in environmental or industrial biotech applications, patents, or certifications in environmental monitoring and bioprocess technology will also be considered.
AGSC 4400 Water Science	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Soil and Water Conservation, Environmental Engineering, Environmental Science, Hydrology, Water Resources	Acceptable alternative qualifications include substantial professional experience in water science, including research or applied work in hydrologic systems, water quality management, irrigation systems, or watershed analysis. Relevant publications, government or agency work in water policy or water resource planning, and professional certifications such as Certified Hydrologist or Certified Environmental Professional will also be considered.
AGSC 4570 Climate Change	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Environmental Policy, Earth Science, Agricultural and Environmental Systems, Environmental Science, Climatology, Atmospheric Science	Acceptable alternative qualifications include substantial professional experience in climate science, environmental modeling, or sustainability-related fields. Documented research or publications related to climate systems, global warming, environmental impact assessment, or adaptation strategies will also be considered. Professional certifications or agency experience with climate data, environmental policy, or risk assessment (e.g., NOAA, EPA) may support alternative credentialing.
AGSC 4900 Entomology	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Plant Science, Pest Management, Entomology, Environmental Science, Agricultural Science	Acceptable alternative qualifications include substantial professional experience in insect biology, integrated pest management, or agricultural pest control. Published research, extension service experience, or documented work with insect classification, behavior, or control strategies in agricultural ecosystems may also be considered. Relevant certifications or practical experience in entomological laboratories or applied pest management programs may support alternative credentialing.
AGSC 1201 Introduction to Plant Science Lab	Earned Master's or Doctorate degree in Agricultural Sciences in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Crop Science, Environmental Science, Plant Science, Horticulture, Botany, Plant Physiology	Acceptable alternative qualifications include extensive hands-on experience in plant science laboratories, horticulture practices, or crop production. Documented experience in teaching lab-based plant science or conducting agricultural field research, as well as publications, workshops, or certifications in related areas, may also qualify a candidate under alternative credentialing guidelines.

AGSC 3140 Integrative Genetics	Earned Master's or Doctorate degree in Agricultural Sciences or Agricultural Engineering in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Biotechnology, Animal and Plant Breeding, Genetics, Molecular Biology, Agricultural Science, Biotechnology	Acceptable alternative qualifications include substantial experience in applied genetics, including gene expression analysis, molecular breeding, or genomics research. Documented scholarly work such as publications, presentations, or participation in funded research in genetics or biotechnology, as well as professional certifications or relevant industry experience, will also be considered.
AGSC 4810 Computing in Agriculture	Earned Master's or Doctorate degree in Agricultural Sciences or Agricultural Engineering in the teaching discipline; or Master's or Doctorate degree with a concentration in the teaching discipline with at least 18 graduate semester hours in the teaching discipline.	Information Systems, Precision Agriculture, Data Science, Computer Science	Acceptable alternative qualifications include significant professional experience in applying computing or information systems in agricultural contexts, such as precision farming, agricultural data management, or digital agriculture tools. Documented experience in agri-tech development, relevant technical certifications, or scholarly contributions (e.g., journal publications, technical reports, or presentations) involving computing in agriculture will also be considered.