

Course Name	Faculty Qualifications Needed	Related Disciplines	Acceptable Alternative Qualifications
AGSC 4630/5630 Gene Editing Technologies	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Genetics, Genomics, Molecular Biology, Biotechnology	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 5010 Foundations of Agricultural and Extension Education	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Animal Science, Agronomy, Food science, Biotechnology	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 5012 Food Supply and Value Chain Management	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Animal Science, Agronomy, Food science, Biotechnology, Agribusiness	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 5014 Food Marketing and Retail Management	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Food Science, Agribusiness	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 5015 Principles of Organic Agriculture	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Animal Science, Agricultural Engineering, Organic Science	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 5020 Teaching and Learning Methods in Agricultural and Extension Education	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Animal Science, Agronomy, Food Science, Biotechnology	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 5030 Curriculum Development and Program Leadership in Agricultural and Extension Education	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Agribusiness, Curriculum Instruction/Design	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 5040 Program Planning, Development and Evaluation	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Agribusiness, Curriculum Instruction/Design	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 5050 Methods of Teaching Agricultural and Environmental Stem	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Curriculum Instruction/Design	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 5060 Statistics for Research	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Biostatistics, Agricultural Economics, Statistics	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a agricultural policy analyst, agricultural research scientist, agricultural economist, crop consultant, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 5065 Qualitative Research Methods	Earned Doctorate degree in Agricultural Sciences, Agricultural Education/Extension or Rural Sociology/Applied Social Science in the teaching discipline or a closely related discipline.	Qualitative Research Methods	Acceptable alternative qualifications include substantial academic or professional experience designing and conducting rigorous qualitative studies (e.g., interviews, focus groups, observations, document analysis) within agriculture or natural resources contexts; demonstrated competence in qualitative research design, sampling, data collection, coding and thematic analysis, and reporting to varied audiences; and experience leading or collaborating on team-based research projects. Proficiency with qualitative analysis software (e.g., NVivo, ATLAS.ti, Dedoose) and evidence of peer-reviewed publications, significant project reports, or instructional materials in qualitative methodology or applied agricultural research will also be considered.
AGSC 5080 Agribusiness Management and Market Analysis	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Agribusiness, Economics, Finance,	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 5090 Food and Fiber Industry	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Agribusiness, Biotechnology	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 5100 Environmental, Resource Economics and Management	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Agribusiness, Economics, Finance	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.



AGSC 5280 Advanced Poultry Nutrition and Biotechnology	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Animal Science, Food Science, Nutrition, Livestock Management, Biotechnology	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 5290 Omics	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Agricultural Engineering, Biotechnology, Genomics	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 5300 Applied Microeconomics in Agribusiness	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Agribusiness, Economics	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 5310 International Agricultural Trade and Marketing	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Agribusiness, Economics	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 5320 Wetlands Ecology and Management	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Agronomy, Ecology, Soil Science, Botany	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a precision agriculture specialist, GIS specialist/technician, remote sensing analyst, agricultural research scientist, agricultural engineer, crop consultant, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 5330 Agribusiness Strategy	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Agribusiness, Economics	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 5340 Cell and Issue Culture	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Animal Science, Cell Biology	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 5350 Independent Study of Contemporary Issues and Problems	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Animal Science, Agronomy, Food Science, Biotechnology, Agribusiness business, Food Industry, Soil Science, Agricultural Engineering	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 5370 Urban and Community Forestry	Earned Doctorate degree in Agricultural Sciences in the teaching discipline or a closely related discipline.	Forestry, Environmental Science	Acceptable alternative qualifications include substantial professional experience (e.g., publications, awards) in Agricultural Sciences or environmental science, relevant professional licensure/certifications, and notable scholarly work such as published articles or conference presentations in forestry or environmental science related fields.
AGSC 5380 Industrial and Environmental Biotechnology	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Biotechnology, Agricultural Engineering	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 5400 Animal Reproductive Physiology	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Animal Science, Livestock Management, Zoology	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 5440 Reproductive Physiology	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Animal Science, Livestock Management, Zoology	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 5470 Immunochemistry in Biotechnology	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Biochemistry, Biotechnology, Immochemistry	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 5500 Environmental Issues and Sustainability	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Biotechnology, Ecology	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 5510 Ecosystem Science and Management	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Ecology, Agronomy	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.

AGSC 5520 Advanced Food Processing and Engineering	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Food Science, Agricultural Engineering	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 5530 Forest Ecology and Management	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Agronomy, Ecology	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 5540 Food Policies and Regulations	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Food Science, Agribusiness	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 5550 Food Safety and Sanitation	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Food Science	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 5560 Food Product Development and Sensory Science	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Food Science	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 5570 Climate Change	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Ecology, Climatology	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 5590 Advanced Technologies in Detection and Food Analysis	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Agriculture Engineering, Biotechnology, Food Science	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 5610-5620 Graduate Seminar in Agricultural Sciences	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Animal Science, Agronomy, Food Science, Biotechnology, Agribusiness business, Food Industry, Soil Science, Agricultural Engineering	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 5640 Scientific Communication and Professionalism	Earned Doctorate degree in Agricultural Sciences in the teaching discipline or a closely related discipline.	Communication	Acceptable alternative qualifications include substantial professional experience (e.g., publications, awards) in scientific communication relevant professional licensure/certifications, and notable scholarly work such as published articles or conference presentations in scientific communication related fields.
AGSC 5700 Environmental Soil Physics	Earned Doctorate degree in Agricultural Sciences in the teaching discipline or a closely related discipline.	Soil Science, Environmental Science, Agronomy	Acceptable alternative qualifications include substantial professional experience (e.g., publications, awards) in soil science or environmental science, relevant professional licensure/certifications, and notable scholarly work such as published articles or conference presentations in soil science related fields.
AGSC 5810 Computing in Agriculture	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Agricultural Engineering	Acceptable alternative qualifications include substantial academic or professional experience in computer system fundamentals, operating systems, programming (with emphasis on Python), algorithm development and problem-solving, binary computation, debugging, testing, documentation, data input/output handling, control structures, functions and parameter passing, arrays, inheritance, and object-oriented design, particularly as applied to agricultural contexts. Individuals with peer-reviewed publications, significant software or data-management projects for agriculture, professional certifications, or instructional materials development in computing for agricultural applications will also be considered.
AGSC 5820 Irrigation Systems Management	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Irrigation Engineering, Hydrology, Soil and Water Conservation	Acceptable alternative qualifications include substantial academic or professional experience in the design, operation, and management of irrigation systems (e.g., surface, sprinkler, drip/micro), hydraulics and pump/pipeline sizing, irrigation scheduling based on evapotranspiration and soil-water balance, sensor based or variable rate irrigation technologies, and assessment of irrigation impacts on water quality and supply. Demonstrated expertise in water resource protection, environmental compliance, and mitigation of adverse effects on soil and aquatic ecosystems is highly valued. Individuals with peer-reviewed publications, significant project deliverables, professional certifications/licensure, or instructional materials in irrigation and water management will also be considered.
AGSC 5830 Precision Agriculture	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Agricultural Engineering, Agronomy, Food Science, Biotechnology	Acceptable alternative qualifications include substantial academic or professional experience in GPS/GNSS-based field positioning, soil property sampling and analysis, yield monitoring and mapping, remote sensing and GIS integration, variable rate technology implementation, and precision agriculture data management workflows. Demonstrated expertise in developing prescription maps and applying site-specific management strategies, along with peer-reviewed publications, significant project deliverables, professional certifications (e.g., FAA Part 107, Certified Crop Adviser with PA specialty), or instructional materials in precision agriculture technologies, will also be considered.

AGSC 5900 Applied Entomology	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Ecology, Entomology	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 5990 Thesis Research	Earned Doctorate degree in Agricultural Sciences in the teaching discipline or a closely related discipline.	Agricultural Engineering, Food & Animal Sciences, Agriculture Business and Education, Environmental Science	Acceptable alternative qualifications include substantial professional experience (e.g., publications, awards) in agricultural sciences relevant professional licensure/certifications, and notable scholarly work such as published articles or conference presentations in agricultural sciences related fields.
AGSC 6010 Gene Structure and Function	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Genetics, Genomics, Molecular Biology	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 6100 Advanced Plant Physiology	Earned Doctorate degree in Agricultural Sciences in the teaching discipline or a closely related discipline.	Plant Physiology, Botany, Agronomy, Plant Science	Acceptable alternative qualifications include substantial professional experience (e.g., publications, awards) in plant physiology or plant biology, relevant professional licensure/certifications, and notable scholarly work such as published articles or conference presentations in plant science related fields.
AGSC 6110 Field Crop Production	Earned Doctorate degree in Agricultural Sciences in the teaching discipline or a closely related discipline.	Agronomy, Crop Science, Plant Science, Environmental Science	Acceptable alternative qualifications include substantial professional experience (e.g., publications, awards) in agronomy or crop science, relevant professional licensure/certifications, and notable scholarly work such as published articles or conference presentations in crop science related fields.
AGSC 6170 Advanced Poultry Production and Management	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Animal Science, Livestock Management, Agribusiness	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 6270 Advanced Agricultural Biosecurity	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Biosecurity, Forensics, Bioforensics	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 6350 Topics in Agricultural Sciences	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Agricultural Engineering	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 6510 Advanced Geospatial Information System	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Agriculture Engineering, Environmental Engineering, GIS-Computer Science, Geography, and/or Data Analysis	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a precision agriculture specialist, GIS specialist/technician, remote sensing analyst, agricultural research scientist, agricultural engineer, crop consultant, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 6520 Advanced Spatial Analysis	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Agriculture Engineering, Environmental Engineering, GIS-Computer Science, Geography, and/or Data Analysis	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a precision agriculture specialist, GIS specialist/technician, remote sensing analyst, agricultural research scientist, agricultural engineer, crop consultant, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 6525 Remote Sensing and Image Analysis	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Agriculture Engineering, Environmental Engineering, GIS-Computer Science, Geography, and/or Data Analysis	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a precision agriculture specialist, GIS specialist/technician, remote sensing analyst, agricultural research scientist, agricultural engineer, crop consultant, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 6530 Advanced Geospatial Metadata	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Agriculture Engineering, Environmental Engineering, GIS-Computer Science, Geography, and/or Data Analysis	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a precision agriculture specialist, GIS specialist/technician, remote sensing analyst, agricultural research scientist, agricultural engineer, crop consultant, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 6540 Advanced Spatial Database Design and Management	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Agriculture Engineering, Environmental Engineering, GIS-Computer Science, Geography, and/or Data Analysis	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a precision agriculture specialist, GIS specialist/technician, remote sensing analyst, agricultural research scientist, agricultural engineer, crop consultant, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 6550 Advanced Spatial Information Systems Application and Design	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Agriculture Engineering, Environmental Engineering, GIS-Computer Science, Geography, and/or Data Analysis	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a precision agriculture specialist, GIS specialist/technician, remote sensing analyst, agricultural research scientist, agricultural engineer, crop consultant, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 6560 Advanced Global Positioning Systems	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Agriculture Engineering, Environmental Engineering, GIS-Computer Science, Geography, and/or Data Analysis	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a precision agriculture specialist, GIS specialist/technician, remote sensing analyst, agricultural research scientist, agricultural engineer, crop consultant, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.

AGSC 6585 Internship in Applied Geospatial Sciences	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Agriculture Engineering, Environmental Engineering, GIS-Computer Science, Geography, and/or Data Analysis	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 6620 Research Ethics in Agricultural Sciences	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Agricultural Engineering, Agribusiness	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a agricultural policy analyst, agricultural research scientist, agricultural economist, crop consultant, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 7010 Advancement in Agricultural Biotechnology	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Biotechnology	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 7020 Economic, Regulatory and Ethical Issues in Biotechnology	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Biotechnology	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 7030 Gene Expression and Regulation in Eukaryotes	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Animal Science, Agricultural Engineering, Genetics	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 7040 Plant Tissue Culture Methods and Applications	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Agronomy, Horticultural Science, Biotechnology, Soil Science, Botany	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 7050 Biotechnology in Animal Reproduction	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Agronomy, Horticultural Science, Biotechnology, Soil Science, Botany	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 7060 Soil Technology	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Agronomy, Horticultural Science, Biotechnology, Soil Science, Botany	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 7070 Applied Genomics	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Animal Science, Agricultural Engineering, Genetics	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 7080 Host-Microbe Interactions	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Microbiology, Immunology	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 7200 Experimental AgriScience Teaching in Higher Education	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Agricultural Engineering, Agribusiness	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 7260 Advanced Environmental Analysis	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Ecology, Agronomy	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 7500 Environmental Issues and Sustainability	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Biotechnology, Ecology	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 7510 Ecosystem Science and Management	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Ecology	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a veterinarian, farm manager, livestock nutritionist, food safety specialist, agricultural sales representative, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.
AGSC 7590 Applied Multivariate Statistics	Earned Doctorate degree in Agriculture and/or Environmental Sciences in the teaching discipline or a closely related discipline.	Biostatistics, Statistics, Advanced Mathematics	Acceptable alternative qualifications in Agriculture Sciences include substantial professional experience as a agricultural policy analyst, agricultural research scientist, agricultural economist, crop consultant, or related field. Relevant professional licensure or certifications, and notable scholarly work such as published articles or conference presentations in Agriculture Sciences.

