



Hutson School of Agriculture



Tony Brannon, Dean Dwayne Driskill, Assistant Dean
103 South Oakley Applied Science Building
270-809-3328

DEPARTMENTS

Agricultural Science	334	Veterinary Technology and	
Animal and Equine Science	348	Pre-Veterinary Medicine	350

PROGRAMS

UNDERGRADUATE

Associate
Agricultural Science and Technology

Baccalaureate
Agricultural Science
Animal Technology

Minor
Agriculture
Equine Science
Golf Course Management

GRADUATE

Master's
Agriculture

Certificate
Veterinary Hospital Management

Hutson School of Agriculture

Broad opportunities for students to prepare for agricultural and related careers are offered by the Hutson School of Agriculture. The Hutson School of Agriculture offers three undergraduate degree programs: a Bachelor of Science in Agriculture (B.S.A.), a Bachelor of Science with a major in Agriculture, and an Associate of Science with emphasis in agricultural science and technology. Minors are available in agriculture, equine science, and golf course management.

The Hutson School of Agriculture also offers a Master of Science degree. The purpose of this degree is to provide an opportunity for professional agricultural personnel to obtain an education at the graduate level or to prepare for terminal degree work at the doctoral level. Faculty advisors assist students in planning an appropriate course of study to meet individual goals and to assure a balanced program.

The Hutson School of Agriculture includes the Department of Agricultural Science, the Department of Animal and Equine Science, and the Department of Veterinary Technology and Pre-Veterinary Medicine. Agricultural facilities include the farm laboratory complex, the Cherry Agricultural Exposition Center, and the Breathitt Veterinary Center. The horse, beef, agronomy, and horticulture facilities are a part of the farm-laboratory complex. The Cherry Agricultural Exposition Center is utilized for equine and rodeo classes, contests, field days, judging contests, clinics, and numerous agricultural activities.

MSU's Breathitt Veterinary Center (BVC), located in Hopkinsville, Kentucky, has as its primary mission the provision of diagnostic data; however, its mission also includes instruction and research. The laboratory is accredited through the American Association of Veterinary Laboratory Diagnosticians. The center's facilities and personnel provide learning experiences for students in the animal health technology program. The BVC also conducts research dealing with infectious diseases of food animals.

Department of Agricultural Science

212 Oakley Applied Science South
270-809-3327

Head: Brian Parr. **Faculty:** Bellah, Driskill, Ferguson, Handayani, Hoover, Morrow, Payne, Santiago, M. Shultz.

The Department of Agriculture Science offers a Bachelor of Science in Agriculture Degree with the following tracks: (1) agronomy, (2) agriculture science/ agriscience technology track, (3) agricultural education, (4) agribusiness, (5) agriculture systems technology, and (6) horticulture. The agriculture science/ agriscience technology track includes emphases in emerging technology, communications/public relations, environmental/ health, agriculture public service/leadership, and agriculture technology.

Facilities for agriculture science include classrooms and labs in Oakley Applied Science South, Howton Agriculture Engineering Building, the West Farm, the Hutson Farm, the North Farm, the Pullen Farm Complex with three greenhouses and environmental center lab, and the agriculture systems technology farm lab.

ASSOCIATE: Agricultural Science and Technology

Associate of Science Degree
CIP 01.9999

University Studies Requirements 21 hrs
(See *Academic Degrees and Programs*.)

University Studies selections must include:

•**Scientific Inquiry, Methodologies, and Quantitative Skills**

BIO 101 Biological Concepts

or

CHE 105 Introductory Chemistry I

or

PHY 120 General Physics I

MAT 120 College Algebra with Business Applications

or

MAT 140 College Algebra

Agriculture Core Courses 41 hrs

AGR 100T Transitions

AGR 100 Animal Science

AGR 130 Agricultural Economics

AGR 133 Field Applications for Agriculture

AGR 160 Horticultural Science

or

AGR 240 Crop Science

AGR 170 Introduction to Agricultural Systems Technology

AGR 199 Contemporary Issues in Agriculture¹
 AGR 339 Computer Applications for Agriculture
 AGR 345 Soil Science
 AGR 399 Professional Development Seminar I
 AGR electives (16 hrs)

Total Curriculum Requirements 62 hrs

¹AGR 199 will fulfill both the agriculture core and university studies elective.

AREA:

Agricultural Science/AgriScience Technology Track

Bachelor of Science in Agriculture Degree
CIP 01.9999

University Studies Requirements 40 hrs

(See *Academic Degrees and Programs*.)

University Studies selections must include:

•Global Awareness, Cultural Diversity and the World's Artistic Traditions

Choose one of the following:

AGR 200 International Agricultural Experience
 AGR 353 World Food, Agriculture and Society
 SPA 106 Basic Spanish and Culture for Agriculture

•Scientific Inquiry, Methodologies, and Quantitative Skills

BIO 101 Biological Concepts
 CHE 105 Introductory Chemistry I
 MAT 120 College Algebra with Business Applications

or

MAT 140 College Algebra

•Social and Self-Awareness and Responsible Citizenship

AGR 199 Contemporary Issues in Agriculture¹
 BIO 103 Saving Planet Earth

or

POL 140 American National Government

•University Studies Electives

CHE 210 Brief Organic Chemistry

and

CHE 215 Organic Chemistry Laboratory

or

GSC 199 Earth Science

Agriculture Core Courses 26 hrs

AGR 100T Transitions
 AGR 100 Animal Science
 AGR 130 Agricultural Economics
 AGR 133 Field Applications for Agriculture
 AGR 160 Horticultural Science
or
 AGR 240 Crop Science
 AGR 170 Introduction to Agricultural Systems Technology
 AGR 199 Contemporary Issues in Agriculture¹
 AGR 339 Computer Applications for Agriculture
 AGR 345 Soil Science
 AGR 399 Professional Development Seminar I
 AGR 599 Agriculture Senior Capstone

AgriScience Technology Track 24 hrs

AGR 377 Agriculture Safety
 AGR 433 Farm Management

and one of the following:

AGR 300 Principles of Animal Nutrition
 AGR 301 Livestock Judging and Evaluation
 AGR 302 Horse Science
 AGR 311 Beef Science

AGR 312 Dairy Science
 AGR 321 Poultry Science
 AGR 326 Swine Science
and one of the following:
 AGR 330 Principles of Agribusiness
 AGR 333 Agribusiness Records and Analysis
 AGR 337 Agricultural Sales and Merchandising
and one of the following:
 AGR 360 Greenhouse Production and Management
 AGR 461 Plant Propagation
 AGR 542 Plant Breeding I
 AGR 549 Weeds and Their Control
one of the following:
 AGR 372 Agricultural Metal Processes
 AGR 379 Field Equipment Technology Management
 AGR 470 Soil and Water Engineering
 AGR 477 Agricultural Power Units
 AGR 576 Agricultural Electrification Systems
 AGR 577 Tractor Power Principles
and
 AGR electives (6 hrs)²

Required Support Courses 21-22 hrs

Choose one of the following support course emphases.

Emerging Technology Emphasis (22 hrs)

AGR 471 Applications in Precision Agriculture²
 AGR 571 Advanced Precision Agriculture²
 GSC 202 Introduction to Geographic Information Science
 GSC 312 Introduction to Remote Sensing
Select three of the following:
 AGR 439 Software Applications for Agriculture²
 AGR 539 Advanced Computer Applications for Agriculture²
 CSC 125 Internet and World Wide Web Technologies
 GSC 305 Map Analysis
 GSC 521 Geographic Information Systems
 TSM 120 Introduction to Telecommunications

Communications Emphasis (21 hrs)

JMC 168 Contemporary Mass Media
 JMC 194 Newswriting
 JMC 330 Mass Media Effects
 JMC 391 Public Relations Principles
 JMC 412 Writing for Public Relations
 JMC 590 Mass Communications Law
 AGR 585 Specialized Journalism/RTV²
or
 JMC 491 Advanced Public Relations

Environmental/Health Emphasis (21 hrs)

AGR 378 Agricultural Environmental Management Systems
 CET 330 Water Quality Technology I
 CET 331 Water Quality Technology II
 CET 342 Air Quality Technology
 CET 353 Solid and Hazardous Waste Management
 CET 555 Environmental Regulatory Affairs
 ENT 286 Introduction to Environmental Engineering Technology

Agriculture Public Service/Leadership Emphasis (21 hrs)

AGR 488 Cooperative Education/Internship²
 AGR 489 Cooperative Education/Internship²
 NLS 290 Introduction to the Role of Service and the Nonprofit Sector
 NLS 350 Program Development in Nonprofit Organizations
 NLS 351 Leadership and Support Systems in Nonprofit Organizations
 AGR, AED, COM, CTE, MGT, NLS advisor approved electives (6 hrs)²

Agricultural Technology Emphasis (21-22 hrs)

- AGR 313 Livestock Production Management Systems
 AGR 439 Software Applications for Agriculture²
 AGR 471 Applications in Precision Agriculture²
 AGR 499 Leadership/Professional Development Seminar II
 AGR 537 Seminar in Agricultural Business Systems
 AGR 538 Seminar in Production Agricultural Systems
or
 AGR 571 Advanced Precision Agriculture
 AGR 539 Advanced Computer Applications for Agriculture
 AGR 547 Crop Management

Unrestricted Electives 8-9 hrs

Total Curriculum Requirements 120 hrs

¹AGR 199 fulfills both Agriculture Core and a University Studies elective requirement.

²These agriculture electives may be fulfilled by agriculture courses used in the chosen emphasis.

AREA:**Agricultural Science/Agricultural Education Certification (5-12) Track****Bachelor of Science in Agriculture Degree**

CIP 01.9999

University Studies Requirements 40 hrs

(See *Academic Degrees and Programs*.)

University Studies selections must include:

•Global Awareness, Cultural Diversity and the World's Artistic Traditions

Choose one of the following:

- AGR 200 International Agricultural Experience
 AGR 353 World Food, Agriculture and Society
 SPA 106 Basic Spanish and Culture for Agriculture

•Scientific Inquiry, Methodologies, and Quantitative Skills

- BIO 101 Biological Concepts
 CHE 105 Introductory Chemistry I
 MAT 140 College Algebra¹

or

- MAT 135 Introduction to Probability and Statistics

•Social and Self-Awareness and Responsible Citizenship

- BIO 103 Saving Planet Earth

or

- POL 140 American National Government
 EDP 260 Psychology of Human Development

•University Studies Electives

Choose one of the following:

- BIO 221 Zoology
 BIO 222 Botany
 CHE 101 Consumer Chemistry
 GSC 199 Earth Science

Note: Certification requires a grade of *B* or better in one English composition course and a *B* or better in a University Studies math course, public speaking, and AED 380 or equivalent course. Additional requirements for admission to teacher education and student teaching must be met. See advisor and/or Office of Teacher Education Services for details.

Agriculture Core Courses 26 hrs

- AGR 100T Transitions
 AGR 100 Animal Science
 AGR 130 Agricultural Economics
 AGR 133 Field Applications for Agriculture
 AGR 160 Horticultural Science
or
 AGR 240 Crop Science
 AGR 170 Introduction to Agricultural Systems Technology
 AGR 199 Contemporary Issues in Agriculture²

- AGR 339 Computer Applications for Agriculture¹
- AGR 345 Soil Science
- AGR 399 Professional Development Seminar I
- AGR 599 Agriculture Senior Capstone

Agricultural Education Track 24 hrs

- AED 104 Agricultural Education, Leadership and Life Knowledge
- AGR 360 Greenhouse Production and Management
- AGR 337 Agricultural Sales and Merchandising
- or*
- AGR 433 Farm Management
- AGR 372 Agricultural Metal Processes
- AGR 570 Agricultural Systems Technology Laboratory Management

Choose one of the following:

- AGR 303 Advanced Horse Science
- AGR 321 Poultry Science
- AGR 325 Small Animal Science
- AGR 461 Plant Propagation
- AGR 471 Applications in Precision Agriculture
- AGR 555 Advanced Soil Fertility
- AGR 573 Agricultural Processing Systems

Choose one of the following:

- AGR 362 Floral Design
- AGR 364 Nursery Management
- AGR 367 Residential Landscape Design
- AGR 368 Landscape Construction

Choose one of the following:

- AGR 300 Principles of Animal Nutrition
- AGR 301 Livestock Judging
- AGR 302 Horse Science
- AGR 311 Beef Science
- AGR 326 Swine Science

Required Support Courses 31 hrs

- AED 380 Agricultural Education, Extension, and Leadership
- AED 501 Methods of Teaching Agricultural Education^{1,3,4}
- CTE 502 Assessment and Curricula in CTE
- HEA 195 First Aid and Safety
- SEC 421 Student Teaching in Secondary School
- SED 300 Educating Students with Disabilities

Total Curriculum Requirements 121 hrs

¹With a grade of B or better.
²AGR 199 will fulfill both the agriculture core and university studies elective.
³Admission to Teacher Education required.
⁴Must be repeated for a total of six hours.

**AREA:
 Agricultural Science/Agribusiness Track**

**Bachelor of Science in Agriculture Degree
 CIP 01.9999**

University Studies Requirements 40 hrs
 (See *Academic Degrees and Programs.*)

University Studies selections must include:
•Global Awareness, Cultural Diversity and the World’s Artistic Traditions

- Choose one of the following:*
- AGR 200 International Agricultural Experience
 - AGR 353 World Food, Agriculture and Society
 - SPA 106 Basic Spanish and Culture for Agriculture
- Scientific Inquiry, Methodologies, and Quantitative Skills**
- BIO 101 Biological Concepts
 - CHE 105 Introductory Chemistry I

MAT 120 College Algebra with Business Applications
or

MAT 140 College Algebra

•Social and Self-Awareness and Responsible Citizenship

COM 260 Communication Ethics
or

POL 140 American National Government

ECO 230 Principles of Macroeconomics

•University Studies Electives

ECO 231 Principles of Microeconomics

FIN 230 Personal Finance

Agriculture Core Courses 26 hrs

AGR 100T Transitions

AGR 100 Animal Science

AGR 130 Agricultural Economics

AGR 133 Field Applications for Agriculture

AGR 160 Horticultural Science
or

AGR 240 Crop Science

AGR 170 Introduction to Agricultural Systems Technology

AGR 199 Contemporary Issues in Agriculture¹

AGR 339 Computer Applications for Agriculture

AGR 345 Soil Science

AGR 399 Professional Development Seminar I

AGR 599 Agriculture Senior Capstone

Agribusiness Track 24-25 hrs

ACC 200 Principles of Accounting I

AGR 328 Statistics for Food and Agriculture
or

MAT 135 Introduction to Probability and Statistics

AGR 330 Principles of Agribusiness

AGR 336 Agricultural Marketing and Price Analysis

AGR 337 Agricultural Sales and Merchandising

AGR 433 Farm Management

AGR 531 Agricultural Finance

AGR 552 Agricultural Policy

Required Support Courses 15 hrs

Choose one of the following support course emphases.

Crop Production Emphasis

AGR 455 Soil Management

AGR 546 Integrated Pest Management

AGR 547 Crop Management

AGR 549 Weeds and their Control

AGR 555 Advanced Soil Fertility

Entrepreneurship Emphasis

AGR 334 Entrepreneurship in Agribusiness

MGT 350 Fundamentals of Management

MGT 358 Entrepreneurial Business Plan Development

Upper-level, advisor approved electives (6 hrs)

Global Emphasis

MKT 360 Principles of Marketing

MKT 568 Global Marketing Management

Choose three of the following:

AGR 353 World Food, Agriculture and Society

AGR 529 International Trade and Agriculture

AGR 533 Seminar in International Agriculture Systems

Three hours of foreign language

Marketing/Management Emphasis

MGT 350 Fundamentals of Management
 MKT 360 Principles of Marketing
 FIN 330 Principles of Finance
 Upper-level, advisor approved electives (6 hrs)

Unrestricted Electives 14-15 hrs²

Total Curriculum Requirements 120 hrs

¹AGR 199 will fulfill both the agriculture core and university studies elective.

²Students wishing to qualify for admission to Murray State's Master of Business Administration (MBA) program should chose the following courses as part of the Unrestricted Electives requirement: ACC 201, BUS 355, CIS 443, FIN 330, MAT 220 (this course will fulfill a University Studies Elective).

AREA:**Agricultural Science/Agricultural Systems Technology Track****Bachelor of Science in Agriculture Degree**

CIP 01.9999

University Studies Requirements 40-41 hrs

(See *Academic Degrees and Programs*.)

University Studies selections must include:

•**Global Awareness, Cultural Diversity and the World's Artistic Traditions**

Choose one of the following:

AGR 200 International Agricultural Experience
 AGR 353 World Food, Agriculture and Society
 SPA 106 Basic Spanish and Culture for Agriculture

•**Scientific Inquiry, Methodologies, and Quantitative Skills**

BIO 101 Biological Concepts
 CHE 105 Introductory Chemistry I
 MAT 130 Technical Math I

or

MAT 140 College Algebra

•**Social and Self-Awareness and Responsible Citizenship**

AGR 199 Contemporary Issues in Agriculture¹

•**University Studies Electives**

CHE 210/215 Brief Organic Chemistry and Organic Chemistry Laboratory

or

GSC 199 Earth Science

or

PHY 130 General Physics I

Agriculture Core Courses 26 hrs

AGR 100T Transitions
 AGR 100 Animal Science
 AGR 130 Agricultural Economics
 AGR 133 Field Applications for Agriculture
 AGR 160 Horticultural Science
 or
 AGR 240 Crop Science
 AGR 170 Introduction to Agricultural Systems Technology
 AGR 199 Contemporary Issues in Agriculture¹
 AGR 339 Computer Applications for Agriculture
 AGR 345 Soil Science
 AGR 399 Professional Development Seminar I
 AGR 599 Agriculture Senior Capstone

Agriculture Systems Technology Track..... 24 hrs

AGR 371 Agricultural Buildings and Construction
 AGR 372 Agricultural Metal Processes
 AGR 377 Agriculture Safety
 AGR 477 Agricultural Power Units
 or
 AGR 577 Tractor Power Principles
 AGR elective (3 hrs)

Choose nine hours from the following:

- AGR 379 Field Equipment Technology Management
- AGR 470 Soil and Water Engineering
- AGR 471 Applications in Precision Agriculture
- AGR 488 Cooperative Education/Internship
- AGR 489 Cooperative Education/Internship
- AGR 551 Selected Studies in Agriculture
- AGR 570 Ag Systems Technology Lab Management
- AGR 571 Advanced Precision Agriculture
- AGR 572 Advanced Metal Work
- AGR 573 Agriculture Processing Systems
- AGR 574 Agricultural Irrigation and Water
- AGR 575 Combine and Grain Handling Systems
- AGR 576 Agriculture Electrification Systems
- AGR 578 Research and Development of Agriculture Tractors and Equipment

Support Courses 6 hrs

- AGR 471 Applications in Precision Agriculture
- AGR 488 Cooperative Education/Internship

or select from the following:

- AGR 489 Cooperative Education/Internship
- AGR 571 Advanced Precision Agriculture
- TSM 110 Electrical Systems I
- ITD 102 CAD Applications
- ITD 104 Computer-Aided Design
- ITD 330 Machine Tool Processes

Unrestricted Electives 23-24 hrs

Total Curriculum Requirements 120 hrs

¹AGR 199 will fulfill both the agriculture core and university studies elective.

AREA:

Agricultural Science/Agronomy Track

**Bachelor of Science in Agriculture Degree
CIP 01.9999**

University Studies Requirements 42 hrs

(See *Academic Degrees and Programs.*)

University Studies selections must include:

•Global Awareness, Cultural Diversity and the World's Artistic Traditions

Choose one of the following:

- AGR 200 International Agricultural Experience
- AGR 353 World Food, Agriculture and Society
- SPA 106 Basic Spanish and Culture for Agriculture

•Scientific Inquiry, Methodologies, and Quantitative Skills

- BIO 222 Botany: Plant Form and Function
- CHE 105 Introductory Chemistry I
- MAT 140 College Algebra

•Social and Self-Awareness and Responsible Citizenship

- BIO 103 Saving Planet Earth

or

- POL 140 American National Government
- AGR 199 Contemporary Issues in Agriculture¹

•University Studies Electives

- CHE 210 Brief Organic Chemistry
- CHE 215 Organic Chemistry Laboratory
- GSC 199 Earth Science

Agriculture Core Courses 26 hrs

- AGR 100T Transitions
- AGR 100 Animal Science
- AGR 130 Agricultural Economics

- AGR 133 Field Applications for Agriculture
- AGR 160 Horticultural Science
- or*
- AGR 240 Crop Science
- AGR 170 Introduction to Agricultural Systems Technology
- AGR 199 Contemporary Issues in Agriculture¹
- AGR 339 Computer Applications for Agriculture
- AGR 345 Soil Science
- AGR 399 Professional Development Seminar I
- AGR 599 Agriculture Senior Capstone

Agronomy Track 25 hrs

- AGR 346 Soil Science Laboratory
- AGR 378 Agricultural Environmental Management Systems
- AGR 455 Soil Management
- AGR 470 Soil and Water Engineering
- AGR 471 Applications in Precision Agriculture
- AGR 542 Plant Breeding I
- AGR 546 Integrated Pest Management
- AGR 547 Crop Management
- AGR 549 Weeds and Their Control

Required Support Courses 15 hrs

Choose one of the following support course emphases.

Practicum Emphasis

- AGR 498 Agronomy Practicum
- Choose one of the following:*
- AGR 330 Principles of Agribusiness
- AGR 433 Farm Management
- AGR 571 Advanced Precision Agriculture

Research Emphasis

- AGR 328 Statistics for Food and Agriculture
- AGR 571 Advanced Precision Agriculture
- BIO 300 Introductory Microbiology
- Agronomy advisor approved research electives (5 hrs)

Sales/Production Emphasis

- AGR 330 Principles of Agribusiness
- AGR 433 Farm Management
- AGR 333 Agribusiness Records and Analysis
- AGR 336 Agricultural Marketing and Price Analysis
- or*
- AGR 337 Agricultural Sales and Merchandising
- Agronomy advisor approved electives (3 hrs)

Unrestricted Electives 12 hrs

Total Curriculum Requirements 120 hrs

¹AGR 199 will fulfill both the agriculture core and university studies elective.

AREA: Agricultural Science/Horticulture Track

Bachelor of Science in Agriculture Degree
CIP 01.9999

University Studies Requirements 40 hrs
(See *Academic Degrees and Programs*.)

University Studies selections must include:

•Global Awareness, Cultural Diversity and the World's Artistic Traditions

Choose one of the following:

AGR 200 International Agricultural Experience
AGR 353 World Food, Agriculture and Society
SPA 106 Basic Spanish and Culture for Agriculture

•Scientific Inquiry, Methodologies, and Quantitative Skills

BIO 222 Botany: Plant Form and Function
CHE 101 Consumer Chemistry
or

CHE 105 Introductory Chemistry I
MAT 140 College Algebra

•Social and Self-Awareness and Responsible Citizenship

AGR 199 Contemporary Issues in Agriculture¹

•University Studies Electives

CHE 210 Brief Organic Chemistry
and

CHE 215 Organic Chemistry Laboratory
or

GSC 199 Earth Science

Agriculture Core Courses 26 hrs

AGR 100T Transitions
AGR 100 Animal Science
AGR 130 Agricultural Economics
AGR 133 Field Applications for Agriculture
AGR 160 Horticultural Science
or
AGR 240 Crop Science
AGR 170 Introduction to Agricultural Systems Technology
AGR 199 Contemporary Issues in Agriculture¹
AGR 339 Computer Applications for Agriculture
AGR 345 Soil Science
AGR 399 Professional Development Seminar I
AGR 599 Agriculture Senior Capstone

Horticulture Track..... 25 hrs

AGR 263 Woody Plant Materials I
AGR 346 Soil Science Laboratory
AGR 360 Greenhouse Production and Management
AGR 361 Horticulture and Greenhouse Management Practicum
or
AGR 460 Professional Experience in Horticulture
AGR 363 Woody Plant Materials II
AGR 365 Herbaceous Plant Materials
AGR 367 Residential Landscape Design
or
AGR 462 Fine Turf Management
or
AGR 563 Arboriculture
AGR 461 Plant Propagation
AGR electives (6 hrs)

Unrestricted Electives 29 hrs

Total Curriculum Requirements 120 hrs

¹AGR 199 will fulfill both the agriculture core and university studies elective.

**MAJOR:
Agricultural Science**

**Bachelor of Science/Bachelor of Arts Degree
CIP 01.9999**

University Studies Requirements 40 hrs
(See *Academic Degrees and Programs.*)

University Studies selections must include:

•Global Awareness, Cultural Diversity and the World’s Artistic Traditions

Choose one of the following:

- AGR 200 International Agricultural Experience
- AGR 353 World Food, Agriculture and Society
- SPA 106 Basic Spanish and Culture for Agriculture

•Scientific Inquiry, Methodologies, and Quantitative Skills

- BIO 101 Biological Concepts
- CHE 105 Introductory Chemistry I
- MAT 120 College Algebra with Business Applications

or

- MAT 140 College Algebra

•Social and Self-Awareness and Responsible Citizenship

- BIO 103 Saving Planet Earth
- or*
- POL 140 American National Government
- AGR 199 Contemporary Issues in Agriculture¹

•University Studies Electives

- CHE 210/215 Brief Organic Chemistry and Organic Chemistry Laboratory
- or*
- GSC 199 Earth Science

Agriculture Core Courses 38 hrs

- AGR 100T Transitions
- AGR 100 Animal Science
- AGR 130 Agricultural Economics
- AGR 133 Field Applications for Agriculture
- AGR 160 Horticultural Science
- or*
- AGR 240 Crop Science
- AGR 170 Introduction to Agricultural Systems Technology
- AGR 199 Contemporary Issues in Agriculture¹
- AGR 339 Computer Applications for Agriculture
- AGR 345 Soil Science
- AGR 399 Professional Development Seminar I
- AGR 599 Agriculture Senior Capstone
- AGR electives (12 hrs)

Required Minor 21 hrs

Unrestricted Electives 21 hrs

Total Curriculum Requirements 120 hrs

¹AGR 199 will fulfill both the agriculture core and university studies elective.

Agriculture Minor 21 hrs

Program must be approved by an advisor with at least six hours of 300-level or above completed at Murray State. Six hours must be upper-level courses completed at Murray State University.

Golf Course Management 21 hrs

ACC 200; AGR 160, 345, 460; MGT 350; and three hours of electives selected from either AGR 462 or MGT 370. Six hours must be upper-level courses completed at Murray State University.

Graduate Program

Graduate Coordinator - Dwayne Driskill
102 Howton Agriculture Building
270-809-6187

The Master of Science in Agriculture provides concentration in agricultural science. The concentration also services agriculture education. An on-line masters is available by taking a series of advisor approved web classes. Please contact the graduate coordinator for details.

Requirements for Admission

Applicants must meet all Murray State University requirements (see *Graduate Admissions*). The status (conditional/unconditional) of an applicant must be determined before the student enrolls in the first class. Additional requirements for unconditional and conditional admission are as follows.

Unconditional

For unconditional admission, students must meet both of the following requirements:

- An overall grade point average (GPA) of 3.0 in the last 60 hours of undergraduate work; and
- The equivalent of an undergraduate area or major in agriculture is required.

Conditional

Students may be conditionally admitted according to the following requirements:

- An undergraduate GPA of at least 2.75 or a GPA of 3.0 in the last 60 hours of undergraduate work; and
- In some cases, students without the undergraduate area or major may be admitted on the condition of significant agricultural work experience and/or complete prerequisites consisting of at least the undergraduate agriculture core courses in a respective field. The plan of study must be approved by the advisor and graduate coordinator and may allow taking of a combination of undergraduate/graduate courses concurrently.

Upon completion of nine hours of graduate work a student admitted conditionally must have a 3.0 GPA or the student will be dropped from the program. A graduate student dropped for academic reasons may reapply after withdrawal from the graduate program for one semester. Readmission decisions will be made according to the recommendation of an appointed graduate admissions committee.

Note: L=literature; R=research; PT=professional training. See page 75.

Master of Science in Agriculture

CIP 01.9999

THESIS REQUIREMENTS

Total Course Requirements..... 31 hours

AGR 686 Training and Presentation Development Strategies for Agricultural Audiences
AGR 713 Graduate Computer Applications^R
AGR 720 Experimental Design and Statistical Analysis
AGR 722 Graduate Capstone Seminar^{1,PT}
AGR 735 Research Methodology^L
AGR 798 Thesis^R
AGR 799 Thesis^R

Specialty..... 12 hrs

600- or 700-level, approved by faculty advisor.

The specialty area courses may be chosen, in consultation with an advisor, from courses that most effectively achieve the student's educational goals.

Other Degree Requirements

Comprehensive written examination over coursework.

¹Class must be taken during the last semester of enrollment. Each student will be expected to prepare and present one seminar based on their thesis project.

NON-THESIS REQUIREMENTS

Total Course Requirements..... 31 hours

AGR 686 Training and Presentation Development Strategies for Agricultural Audiences
AGR 700 Research in Agriculture^{R,1}
AGR 713 Graduate Computer Applications
AGR 720 Experimental Design and Statistical Analysis
AGR 722 Graduate Capstone Seminar^{2,PT}
AGR 735 Research Methodology^L

Specialty..... 15 hrs

600- or 700-level, approved by faculty advisor.

The specialty area courses may be chosen, in consultation with an advisor, from courses that most effectively achieve the student's educational goals.

Other Degree Requirements

Comprehensive written examination, oral examination, and research presentation.

¹Course must include a creative component or significant research report.

²Class must be taken during the last semester of enrollment. Each student will be expected to prepare and present one seminar based on their creative component, research report or work experience.

Master of Science in Agriculture/Agribusiness Economics Concentration

CIP 01.9999

NON-THESIS ONLY

Total Course Requirements..... 31 hours

AGR 686 Training and Presentation Development Strategies for Agricultural Audiences

AGR 700 Research in Agriculture ^{R,1,2} (6 hrs)

AGR 713 Graduate Computer Applications

AGR 720 Experimental Design and Statistical Analysis

AGR 722 Graduate Capstone Seminar ^{PT}

AGR 735 Research Methodology ^{L, 3}

Agribusiness Economics Concentration

Select 12 hours from the following:

AGR 628 Agriculture, Food and Rural Law

AGR 631 Agricultural Finance

AGR 652 Agricultural Policy

AGR 739 Agribusiness Management

AGR 744 Graduate Cooperative Education⁴

Advisors may approve substitutions to non-core courses in special situations or to better align coursework with the student's professional goals. Students should consult with their advisor to identify appropriate online courses among the following prefixes: ACC, AGR, COM, ECO, FIN, MGT, or MKT. Note: No more than two classes from ACC, ECO, FIN, MGT or MKT may be taken.

¹Must include a significant creative or scholarly component that will be presented as part of a student's final oral presentation. See HSOA Creative Component Guidelines for details.

²Must be taken with advisor/committee chair.

³Can be substituted with AED 735.

⁴Experience must be related to agribusiness and approved by advisor prior to enrollment.

Master of Science in Agriculture/Agricultural Education Concentration

CIP 01.9999

NON-THESIS ONLY

Total Course Requirements..... 31 hours

AGR 686 Training and Presentation Development Strategies for Agricultural Audiences

AGR 700 Research in Agriculture ^{R,1,2} (6 hrs)

AGR 713 Graduate Computer Applications

AGR 720 Experimental Design and Statistical Analysis

AGR 722 Graduate Capstone Seminar^{3, PT}

AGR 735 Research Methodology ^{L, 4}

Agricultural Education Concentration

Select 12 hours from the following:

AED 682 Instructional Design for Agricultural Education

AED 683 Instructional Material in Agricultural Education

AED 684 Beginning Teacher Workshop⁵

AED 685 Teaching Adults in Agriculture

AED 735 Qualitative Research Methods

Advisors may approve substitutions to non-core courses in special situations or to better align coursework with the student's professional goals. Students should consult with their advisor to identify appropriate online courses among the following prefixes: AGR, COM, CTE, EDU, or NLS.

¹Must include a significant creative or scholarly component that will be presented as part of a student's final oral presentation. See HSOA Creative Component Guidelines for details.

²Must be taken with advisor/committee chair.

³Must be taken during semester of graduation.

⁴Can be substituted with AED 735.

⁵Intended for current secondary agriculture teachers. Kentucky teachers should enroll the fall following completion of the first year of teaching.

Master of Science in Agriculture/Sustainable Agriculture Concentration

CIP 01.9999

Total Course Requirements 31 hours

AGR 686 Training and Presentation Development Strategies for Agricultural Audiences
 AGR 700 Research in Agriculture ^{R,1,2} (6 hrs)
 AGR 713 Graduate Computer Applications
 AGR 720 Experimental Design and Statistical Analysis
 AGR 722 Graduate Capstone Seminar^{3,PT}
 AGR 735 Research Methodology⁴

Sustainable Agriculture Concentration

Select 12 hours from the following:

AGR 655 Advanced Soil Fertility⁴
 AGR 661 Sustainable Agriculture
 AGR 662 Principles of Agroecology
 AGR 671 Advanced Precision Agriculture
 AGR 744 Graduate Cooperative Education⁵

Advisors may approve substitutions to non-core courses in special situations or to better align coursework with the student's professional goals. Students should consult with their advisor to identify appropriate online courses among the following prefixes: AED, AGR, GSC, WSC.

¹Must include a significant creative or scholarly component that will be presented as part of a student's final oral presentation. See HSOA Creative Component Guidelines for details.

²Must be taken with advisor/committee chair.

³Must be taken during semester of graduation.

⁴See current Academic Bulletin for prerequisite requirements.

⁵Experience must be related to sustainable agriculture and approved by advisor prior to enrollment.

Master of Science in Agriculture/Veterinary Hospital Management Concentration

CIP 01.9999

THESIS OR NON-THESIS

Total Course Requirements 31 hours

AGR 700 Research in Agriculture ^{R,1,2} (6 hrs)
 or
 AGR 798/799 Thesis³ (6 hrs)
 AGR 720 Experimental Design and Statistical Analysis
 AGR 722 Graduate Capstone Seminar^{PT}
 AGR 735 Research Methodology⁴

Veterinary Hospital Management Concentration

AGR 680 Veterinary Products
 AGR 682 Veterinary Practice and Operations
 AGR 683 Veterinary Law and Ethics
 AGR 713 Graduate Computer Applications
 MGT 654 Seminar in Human Resource Management
 600-700 level elective in AGR, BUS, MGT, MKT, or Human Resources

Students completing this degree will also receive the Veterinary Hospital Management Certificate.

¹Must include a significant creative or scholarly component that will be presented as part of a student's final oral presentation. See HSOA Creative Component Guidelines for details.

²Must be taken with advisor/committee chair.

³Students who plan to pursue a terminal degree are encouraged to enroll in AGR 798/799 in lieu of AGR 700.

⁴Must be taken during semester of graduation.

Department of Animal and Equine Science

212 Oakley Applied Science South
270-809-3327

Interim Head: O.L. Robertson. **Faculty:** Atkerson, Conover, Porr, Robertson, Robinson, A. Shultz, Van Hooser.

The Department of Animal and Equine Science offers a Bachelor of Science in Agriculture degree with three emphases: (1) food animal emphasis and (2) equine science emphasis and (3) equine management. The department also offers a minor in equine science. Career preparations include the scientific study of feeding, breeding, management and marketing of animals and their products along with the multitude of related businesses and industries.

Facilities for animal and equine science include an equine center, rodeo facilities, and a beef cattle complex including a registered Angus herd and stocker calf intensive grazing systems.

AREA: Animal Technology/Animal/Equine Science Track

Bachelor of Science in Agriculture Degree
CIP 51.0808

University Studies Requirements 40-41 hrs
(See *Academic Degrees and Programs.*)

University Studies selections must include:

•**Scientific Inquiry, Methodologies, and Quantitative Skills**

BIO 101 Biological Concepts

or

BIO 221 Zoology: Animal Form and Function

MAT 140 College Algebra

and one of the following:

CHE 101 Consumer Chemistry

CHE 105 Introductory Chemistry I

CHE 201 General College Chemistry

•**Social and Self-Awareness and Responsible Citizenship**

AGR 199 Contemporary Issues in Agriculture

•**University Studies Electives**

Choose one of the following:

CHE 210/215 Brief Organic Chemistry and Organic Chemistry Laboratory

CHE 202 General Chemistry and Qualitative Analysis

GSC 101 The Earth and the Environment

GSC 102 Earth Through Time

GSC 199 Earth Science

Agriculture Core Courses 24 hrs

AGR 100T Transitions

AGR 100 Animal Science

AGR 300 Principles of Animal Nutrition

AGR 310 Applications in Animal Technology

AGR 339 Computer Applications for Agriculture

AGR 399 Professional Development Seminar I

AGR 504 Diseases of Livestock

AGR 599 Agriculture Senior Capstone

and one of the following:

AGR 170 Introduction to Agricultural Systems Technology

AGR 377 Agriculture Safety

AGR 375 Animals Emergency Preparedness

and one of the following:

AGR 403 Equine Reproduction

AGR 506 Reproductive Physiology

AGR 523 Artificial Insemination Techniques for Cattle

Required Emphasis Courses 23-24 hrs*Choose one of the following emphases.***Food Animal Emphasis**

AGR 130 Agricultural Economics
 AGR 133 Field Applications for Agriculture
 AGR 240 Crop Science
 AGR 345 Soil Science

and two of the following:

AGR 311 Beef Science
 AGR 321 Poultry Science
 AGR 324 Veterinary Diagnostic Imaging
 AGR 326 Swine Science

and one of the following:

AGR 301 Livestock Judging and Evaluation
 AGR 313 Livestock Production Management Systems
 AGR 320 Livestock Behavioral Analysis
 AGR 402 Advanced Livestock Judging

and one of the following:

AGR 502 Advanced Nutrition
 AGR 503 Genetics and Animal Breeding
 AGR 512 Beef Cattle Management Systems

Equine Management Emphasis

AGR 101 Basic Stock Seat Horsemanship
or

AGR 111 Basic Forward Seat Equitation
 AGR 130 Agricultural Economics
 AGR 133 Field Applications for Agriculture
 AGR 201 Intermediate Horsemanship
 AGR 302 Horse Science
 AGR 309 Equine Facility Management

or

AGR 317 Equine Health Care and Management
 AGR 318 Equine Forage Management

or

AGR 319 Equine Nutrition and Feeding

and one of the following:

AGR 304 Advanced Stock Seat
 AGR 306 Advanced Forward Seat
 AGR 405 Equine Behavior Modification
 AGR 514 Teaching Students Horsemanship

Equine Science Emphasis

AGR 101 Basic Stock Seat Horsemanship
or

AGR 111 Basic Forward Seat Equitation
 AGR 130 Agricultural Economics
 AGR 302 Horse Science
 AGR 303 Advanced Horse Science
 AGR 309 Equine Facility Management

or

AGR 317 Equine Health Care and Management
 AGR 315 Equine Exercise Physiology
 AGR 318 Equine Forage Management

or

AGR 319 Equine Nutrition and Feeding
 AGR 407 Equine Selection and Evaluation

Required Support Courses 12 hrs*Choose the following support courses for the equine management or equine science emphases only:***Equine Management**

AGR 330 Principles of Agribusiness
 AGR 333 Agribusiness Records and Analysis

AGR 433 Farm Management
 MGT 350 Fundamentals of Management

Equine Science

AGR 133 Field Applications for Agriculture
 AGR 240 Crop Science
 AGR 345 Soil Science
 AGR 328 Statistics for Food and Agriculture

Unrestricted Electives 18-33 hrs

Total Curriculum Requirements 120 hrs

Equine Science Minor 21 hrs

Program must include 15 hours of required courses: AGR 201, 302, 303, 317 and AGR 101 or 111. Six additional hours of upper-level equine courses must be completed at Murray State University.

Department of Veterinary Technology and Pre-Veterinary Medicine

A. Carman Animal Health Technology Center
 270-809-7001

Head: Terry Canerdy. **Faculty:** Canerdy, DeWees, Doom, Hoffman, Jones, Papajeski, Provine.

The Veterinary Technology Program at Murray State University is one of only 22 schools in the nation that offers a fully accredited bachelor of science degree in the area of veterinary technology. Students are also given the track to complete the prerequisite courses required by any of the twenty-eight veterinary schools in the U.S. The program involves hands-on experience with many animal species including small, large, and exotic animals. The program has been continually accredited by the American Veterinary Medical Association (AVMA) since 1986. Facilities for the veterinary technology/pre-veterinary medicine program include classrooms and laboratories at the A. Carman Animal Health Technology Center and the university farms.

A portion of the veterinarian technology curriculum will involve students taking courses, which have been labeled the BVC (Breathitt Veterinary Center) courses. The BVC courses include AGR 340, AGR 400, AGR 410, AGR 420, and AGR 430. BVC courses must be taken together in one semester. Because the veterinary technology/pre-veterinary program is an accredited program, available space is limited to ensure the quality of instruction. Registration in BVC courses is based on available openings. The veterinary technology program will make every effort to ensure that students who need BVC courses will be placed, but no guarantee is made that the student will be enrolled during the preferred semester. Applications are due February 1st for the fall term and September 1st for the spring term. Once completed applications are reviewed, students will be notified of their placement into BVC courses by March 1st for the fall semester and October 1st for the spring semester.

The following prerequisites are required for the BVC classes: AGR 310, AGR 322, AGR 332, and eight hours of chemistry. The student must have a grade of C or higher in these courses before being considered. After the prerequisites have been evaluated, the following criteria will be reviewed in order to determine the student's placement into the BVC courses:

- Completed applications were submitted by the appropriate deadline.
- BVC courses are the ONLY classes remaining.
- BVC courses plus one other course are the only classes remaining.
- Unavoidable course conflicts will be evaluated on a case by case basis.
- Once the placed students are enrolled any space available will be given to students on a first come basis.

The following courses are required by the American Veterinary Medical Association for Veterinary Technician certification: AGR 310, 322, 324, 331, 332, 340, 400, 410, 420, 430, 504, 506, 510, 511, 540, 550, 590, and 599.

**AREA:
 Animal Technology/Veterinary Technology Track**

**Bachelor of Science in Agriculture Degree
 CIP 51.0808**

ACCREDITED BY:
 American Veterinary Medical Association

University Studies Requirements 41 hrs
 (See *Academic Degrees and Programs.*)

University Studies selections must include:

- **Scientific Inquiry, Methodologies, and Quantitative Skills**
- BIO 101 Biological Concepts
- CHE 105 Introductory Chemistry I

- MAT 140 College Algebra
•Social and Self-Awareness and Responsible Citizenship
 AGR 199 Contemporary Issues in Agriculture
 Ethics, Social Responsibility and Civic Engagement sub-category elective
•University Studies Electives
 CHE 210 Brief Organic Chemistry
 CHE 215 Organic Chemistry Laboratory

Agriculture Core Courses 24 hrs

- AGR 100T Transitions
 AGR 100 Animal Science
 AGR 300 Principles of Animal Nutrition
 AGR 310 Applications in Animal Technology
 AGR 339 Computer Applications for Agriculture
 AGR 399 Professional Development Seminar I
 AGR 504 Diseases of Livestock¹
 AGR 599 Agriculture Senior Capstone
and one of the following:
 AGR 170 Introduction to Agricultural Systems Technology
 AGR 377 Agriculture Safety
 AGR 375 Animals Emergency Preparedness
and one of the following:
 AGR 403 Equine Reproduction
 AGR 506 Reproductive Physiology
 AGR 523 Artificial Insemination Techniques for Cattle

Veterinary Technology Track¹ 22 hrs

- AGR 322 Veterinary Laboratory Principles
 AGR 324 Veterinary Diagnostic Imaging
 AGR 332 Veterinary Nursing
 AGR 510 Animal Anatomy and Physiology
 AGR 540 Veterinary Surgery and Anesthesia
 AGR 489 Cooperative Education/Internship
or
 AGR 590 Internship in Animal Technology
 BIO 300 Introductory Microbiology

Required Support Courses 30-31 hrs

Choose one of the following support courses emphases:

Veterinary Technology Emphasis

- AGR 331 Small Animal Diseases
 AGR 340 Veterinary Laboratory Sciences
 AGR 400 Veterinary Microbiology¹
 AGR 410 Advanced Veterinary Hematology¹
 AGR 420 Veterinary Clinical Chemistry¹
 AGR 430 Veterinary Parasitology¹
 AGR 511 Animal Anatomy and Physiology Laboratory¹
 AGR 550 Applied Pharmacology¹
 Approved Electives (6 hrs)

Large Animal Emphasis

- AGR 313 Livestock Production Management Systems
 AGR 340 Veterinary Laboratory Sciences
 AGR 400 Veterinary Microbiology¹
 AGR 410 Advanced Veterinary Hematology
 AGR 420 Veterinary Clinical Chemistry
 AGR 430 Veterinary Parasitology
 AGR 511 Animal Anatomy and Physiology Laboratory
 AGR 550 Applied Pharmacology
 AGR Elective - Animal Science or Animal Health Technology
and one of the following:
 AGR 302 Horse Science
 AGR 311 Beef Science
 AGR 326 Swine Science

Zoological Animal Health Technology Emphasis

- AGR 331 Small Animal Diseases
- AGR 340 Veterinary Laboratory Sciences
- AGR 400 Veterinary Microbiology¹
- AGR 410 Advanced Veterinary Hematology
- AGR 420 Veterinary Clinical Chemistry
- AGR 430 Veterinary Parasitology
- AGR 511 Animal Anatomy and Physiology Laboratory
- AGR 550 Applied Pharmacology
- Approved elective (3 hrs)
- and one of the following:*
- BIO 570 Ichthyology
- BIO 572 Herpetology
- BIO 573 Ornithology
- BIO 574 Mammalogy

Unrestricted Electives2-3

Total Curriculum Requirements 120 hrs

¹Required by American Veterinary Medical Association for certification.

AREA:

Animal Technology/Veterinary Technology/Pre-Veterinary Medicine Track

**Bachelor of Science in Agriculture Degree
CIP 51.0808**

ACCREDITED BY:
American Veterinary Medical Association

University Studies Requirements 44 hrs
(See *Academic Degrees and Programs.*)

University Studies selections must include:

•Scientific Inquiry, Methodologies, and Quantitative Skills

- BIO 101 Biological Concepts
- CHE 201 General College Chemistry
- MAT 150 Algebra and Trigonometry

•Social and Self-Awareness and Responsible Citizenship

- PHI 202 Ethics
- or*
- POL 140 American National Government
- PSY 180 General Psychology

•World's Historical, Literary, and Philosophical Traditions

- CIV 201 World Civilizations I

•University Studies Electives

- CHE 202 General Chemistry and Qualitative Analysis
- CIV 202 World Civilizations II

Note: 3rd year Veterinary School Applicants must also take HUM 212 and English Literature.

Agriculture Core Courses 24 hrs

- AGR 100T Transitions
- AGR 100 Animal Science
- AGR 300 Principles of Animal Nutrition
- AGR 310 Applications in Animal Technology
- AGR 339 Computer Applications for Agriculture
- AGR 399 Professional Development Seminar I
- AGR 504 Diseases of Livestock
- AGR 599 Agriculture Senior Capstone
- and one of the following:*
- AGR 170 Introduction to Agricultural Systems Technology
- AGR 377 Agriculture Safety
- AGR 375 Animals Emergency Preparedness

and one of the following:

AGR 403 Equine Reproduction
 AGR 506 Reproductive Physiology
 AGR 523 Artificial Insemination Techniques for Cattle

Pre-Veterinary Medicine Track 22 hrs

AGR 322 Veterinary Laboratory Principles
 AGR 324 Veterinary Diagnostic Imaging
 AGR 332 Veterinary Nursing
 AGR 510 Animal Anatomy and Physiology
 AGR 550 Applied Pharmacology
 AGR 489 Cooperative Education/Internship
 or
 AGR 590 Internship in Animal Technology
 BIO 300 Introductory Microbiology

Required Support Courses 25 hrs

AGR 331 Small Animal Diseases
 BIO 221 Zoology: Animal Form and Function
 CHE 312 Organic Chemistry I
 CHE 320 Organic Chemistry II
 CHE 330 Basic Biochemistry
 PHY 130 General Physics I
 PHY 131 General Physics I Laboratory
 BIO 321 Cell Biology

Unrestricted Electives..... 5 hrs

Total Curriculum Requirements 120 hrs

Graduate Program

The Certificate in Veterinary Hospital Management is designed to complement the undergraduate and graduate professional degree programs. The program's objectives are to provide students with opportunities to expand their knowledge in veterinary technology, to explore the business operation of a veterinary clinic, and to experience how the combination of their academic undergraduate and certificate course work can complement their job search.

CERTIFICATE: Veterinary Hospital Management

CIP 51.0808

Requirements for Admission

Students who hold an undergraduate degree in veterinary technology or are currently enrolled in a graduate program may apply for acceptance to the Certificate in Veterinary Hospital Management program. Persons who already hold a graduate degree may also apply for the program.

Applicants must comply with the Murray State University requirements (see *Graduate Admissions*).

- For unconditional admission, an undergraduate GPA of 3.0 or higher.
- For conditional admission, judgement will be determined by probable success based on 1) Graduate Record Examination scores, 2) letters of recommendation, and/or 3) other evidence such as a planned program of prerequisite courses.

Total Course Requirements 18 hours

AGR 680 Veterinary Products
 AGR 682 Veterinary Practice and Operations
 AGR 683 Veterinary Law and Ethics
 AGR 713 Graduate Computer Applications
 MGT 654 Seminar in Human Resource Management
 600-level elective in AGR, BUS, MGT, MKT or human resources.

