Hutson School of Agriculture

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103 South Oakley Applied Science Building
270-809-3328

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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


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
  or
  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
Agriculture

AGR 199 Contemporary Issues in Agriculture
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
  or
  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)

Required Support Courses ........................................... 21-22 hrs
Choose one of the following support course emphases.

Emerging Technology Emphasis (22 hrs)
AGR 471 Applications in Precision Agriculture
AGR 571 Advanced Precision Agriculture
GSC 202 Introduction to Geographic Information Science
GSC 312 Introduction to Remote Sensing
Select three of the following:
AGR 439 Software Applications for Agriculture
AGR 539 Advanced Computer Applications for Agriculture
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/RTV
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/Internship
AGR 489 Cooperative Education/Internship
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)


Agricultural Technology Emphasis (21-22 hrs)
AGR 313 Livestock Production Management Systems
AGR 439 Software Applications for Agriculture\(^2\)
AGR 471 Applications in Precision Agriculture\(^2\)
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
\(^1\)AGR 199 fulfills both Agriculture Core and a University Studies elective requirement.
\(^2\)These 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 Algebra\(^1\)
  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 \(\textit{B}\) or better in one English composition course and a \(\textit{B}\) 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 Agriculture\(^2\)
### Agricultural Science Track

**24 hrs**

- **AGR 339** Computer Applications for Agriculture
- **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
- **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**

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

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### 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**
  
  **Choose one of the following:**
  
  - **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 Agriculture ('
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 hrs

Total Curriculum Requirements .................................... 120 hrs

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

2 Students wishing to qualify for admission to Murray State’s Master of Business Administration (MBA) program should choose 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 Agriculture

• 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 Agriculture
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 Agriculture
1
• 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 Agriculture
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.
Agriculture 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 Agriculture

**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 Agriculture
- 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.
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

THESIS REQUIREMENTS

Total Course Requirements 31 hours
AGR 686 Training and Presentation Development Strategies for Agricultural Audiences
AGR 713 Graduate Computer Applications
AGR 720 Experimental Design and Statistical Analysis
AGR 722 Graduate Capstone Seminar PT
AGR 735 Research Methodology
AGR 798 Thesis PT
AGR 799 Thesis PT

Specialty 12 hrs
600- or 700-level, approved by faculty advisor.

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 PT
AGR 713 Graduate Computer Applications
AGR 720 Experimental Design and Statistical Analysis
AGR 722 Graduate Capstone Seminar PT
AGR 735 Research Methodology
Specialty

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 \( ^{R,2,4} \) (6 hrs)
AGR 713 Graduate Computer Applications
AGR 720 Experimental Design and Statistical Analysis
AGR 722 Graduate Capstone Seminar
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 Education

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 \( ^{R,2,4} \) (6 hrs)
AGR 713 Graduate Computer Applications
AGR 720 Experimental Design and Statistical Analysis
AGR 722 Graduate Capstone Seminar
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 Workshop
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.


**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[^1,^2] (6 hrs)
AGR 713 Graduate Computer Applications
AGR 720 Experimental Design and Statistical Analysis
AGR 722 Graduate Capstone Seminar[^3,^4]
AGR 735 Research Methodology[^5]

**Sustainable Agriculture Concentration**

*Select 12 hours from the following:*

AGR 655 Advanced Soil Fertility[^4]
AGR 661 Sustainable Agriculture
AGR 662 Principles of Agroecology
AGR 671 Advanced Precision Agriculture
AGR 744 Graduate Cooperative Education[^6]

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.

[^1]: Must 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.
[^2]: Must be taken with advisor/committee chair.
[^3]: Must be taken during semester of graduation.
[^4]: See current Academic Bulletin for prerequisite requirements.
[^5]: Experience 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[^1,^2] (6 hrs)
or
AGR 720 Experimental Design and Statistical Analysis
AGR 722 Graduate Capstone Seminar[^3,^7]
AGR 735 Research Methodology[^3]

**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.

[^1]: Must 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.
[^2]: Must be taken with advisor/committee chair.
[^3]: Students who plan to pursue a terminal degree are encouraged to enroll in AGR 798/799 in lieu of AGR 700.
[^4]: Must be taken during semester of graduation.
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 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
Agriculture

**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.

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**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.

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**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**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 101</td>
<td>Biological Concepts</td>
</tr>
<tr>
<td>CHE 105</td>
<td>Introductory Chemistry I</td>
</tr>
</tbody>
</table>
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 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

Veterinary Technology Track 1 ............................................. 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 Microbiology
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 Electives (6 hrs)

Large Animal Emphasis
AGR 313 Livestock Production Management Systems
AGR 340 Veterinary Laboratory Sciences
AGR 400 Veterinary Microbiology
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
Agriculture

Zoological Animal Health Technology Emphasis
AGR 331 Small Animal Diseases
AGR 340 Veterinary Laboratory Sciences
AGR 400 Veterinary Microbiology
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 Electives .................................................................2-3

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
Agriculture

**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

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**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.