Department of Mathematics and Computer Sciences

MAJORS
Applied Mathematics (BS)
Mathematics for Secondary Education (BS)
Bioinformatics (BS)
Computer Science (BS)
Cyber Security (BS)
Management Information Systems (BS)
General Studies -- Applied Mathematics (BA); Computer Science (BA);
Management Information Systems (BA)

MINORS
Applied Mathematics
Bioinformatics
Computer Science
Cyber Security
Management Information Systems

CERTIFICATES
Cyber Security
Website Development

CONCENTRATIONS
Cyber Security
Mathematics for Middle School

DEGREE PROGRAM AFFILIATIONS
Dual Degree Program in Engineering with the University of Missouri–Kansas City
and with Washington University in St. Louis

The department of mathematics and computer science offers the bachelor of science degree with majors in applied mathematics, mathematics for secondary education, bioinformatics, computer science, cyber security, and management information systems. The degree in applied mathematics can be readily combined with a dual degree in engineering from the University of Missouri - Kansas City or Washington University in St. Louis.
Students may also choose minors in applied mathematics, computer science, cyber security and management information systems. Students pursuing a major in applied mathematics, computer science or management information systems may also choose a concentration in cyber security. The department of mathematics and computer science, together with the department of fine arts, also offers a certificate in website development. The department also offers a concentration and a certificate in cyber security.

Graduate students may earn a master of science degree in computer science, learning technologies or instructional design and technology. See the graduate programs section of this catalog.

The rigorous curriculum in each program emphasizes thinking analytically, solving problems, and communicating effectively. Specifically, through its programs, the department seeks to acquaint students with current developments in bioinformatics, computer science, cyber security, management information systems, applied mathematics, mathematics education, and learning technologies and instructional design and technology; equip graduates with essential knowledge and skills to secure professional positions in their fields; and prepare students for successful transitions from the classroom to the workplace.

To achieve these objectives, the department encourages students to interact with faculty by providing individual advising and creating an environment that is conducive to continued professional growth. With the assistance of the department, students may pursue their professional goals through internships.

If a student intending to major in the department is not ready for placement into MTH 150 (Calculus with Analytic Geometry I) upon matriculation, the student must meet the following minimum grade requirements in the prerequisite courses:

- If placed into MTH 091, the student must earn a grade of at least A- to progress to MTH 095.
- If placed into MTH 095, the student must earn a grade of at least A- to progress to MTH 105 and/or CIS 160.
- If placed into MTH 105, the student must earn a grade of at least B- to progress to MTH 150.
- If placed into MTH 110, the student must earn a grade of at least B- to progress to MTH 150.

A student pursuing a major in the department must earn a grade of B- or better in CIS 160 to progress to CIS 161, and in CIS 161 to progress to CIS 210 and above.

FACULTY
Mary Abkemeier, professor of mathematics and computer science and chairperson of the department of mathematics and computer science
Zabid Anwar, assistant professor of mathematics and computer science
Nancy Anwar, associate professor emeritus of mathematics and computer science
Kathryn Graves, assistant professor of mathematics and computer science
Kathleen Roy, assistant professor of mathematics and computer science
Guanyu Tian, assistant professor of mathematics and computer science
Samantha Warren, assistant professor of mathematics and computer science
Adam Weyhaupt, professor of mathematics
Yi Yang, assistant professor of mathematics and computer science

UNDERGRADUATE PROGRAMS
Major Approval
Major approval is required during the second semester of the sophomore year, or after the completion of 45 credit hours at Fontbonne. For transfer students, major approval is required after completing the equivalent of one full semester (a minimum of 12 credits) at Fontbonne.

Students are required to earn a minimum cumulative grade point average of 2.5 in the courses specified below along with the submission of their Portfolio A to continue in their major program at the time of application for major approval.

Students who are majoring in Mathematics for Secondary Education are required to earn a minimum cumulative grade point average of 2.5 in the courses specified in the sections titled, Major in Mathematics for Secondary Education, along with submission of their Portfolio A. In addition they must earn a minimum cumulative grade point average of 3.0 in all professional coursework. Professional coursework is defined as being all courses completed within the Department of Mathematics and Computer Science as well as all courses completed within the Department of Education/Special Education. Students must have passed the Missouri General Education Assessment and must have completed both EDU 268 and EDU 269.
Applied Mathematics and Mathematics for Secondary Education Majors:
MTH 115, MTH 120, MTH 150

Bioinformatics Majors:
MTH 125, CIS 161, BNF 200

Computer Science
CIS 160, CIS 161, MTH 150

Cyber Security Majors:
CIS 125, CIS 160, CIS 161

Management Information Science Major:
CIS 120, CIS 160, CIS 161

For transfer students, who did not take these courses at Fontbonne University, 12 credit hours of appropriate coursework will be stipulated by the faculty of the department. The department reserves the right to administer a test in the appropriate discipline for acceptance into its major programs when deemed necessary.

A minimum GPA of 2.0 in the major is required to earn a BS degree in the Department of Mathematics and Computer Science. A minimum GPA of 2.0 in a minor is required to earn a minor in the Department of Mathematics and Computer Science.

MAJOR IN APPLIED MATHEMATICS

This major exposes students to various areas of applied mathematics, including mathematical modeling and statistics. Computer programming and software applications are also included in this major. Internships are available as MTH 284 and 484, but are not required.

Baccalaureate Degree and Residency Requirements
All requirements for an undergraduate degree are listed under academic policies and regulations in the undergraduate introductory section in this catalog. These requirements include a graduation requirement of at least one course in religion or theology.

General Education Requirements
The 42 credit hours of general education requirements are presented in the undergraduate academic information section of this catalog. A course that meets a general education requirement may also meet a course requirement in the major or a course requirement in another discipline.

Courses Required for the Major
One of the following two courses:
- MTH 115 Introduction to Statistics (3 credits)
- MTH 125 Biostatistics (3 credits)
MTH 120 Discrete Mathematics (3 credits)
MTH 150 Calculus with Analytic Geometry I (4 credits)
MTH 151 Calculus with Analytic Geometry II (4 credits)
MTH 200 Linear Algebra (3 credits)
MTH 250 Calculus with Analytic Geometry III (4 credits)
MTH 310 Differential Equations (3 credits)

Three of the following five courses:
- MTH 300 Modeling and Numerical Approximation (3 credits)
- MTH 315 Advanced Statistics (3 credits)
- MTH 316 Non-Parametric Statistics (3 credits)
- MTH 325 Theory and Applications of Probability (3 credits)
- MTH 385 Principles of Cryptography (3 credits)
MTH 430 Algebraic Structures (3 credits)
MTH 498 Senior Portfolio (1 credit)
MTH 499 Senior Synthesis (3 credits)

Courses Required in Other Disciplines
An application area may be selected from any of the following: accounting, business, biology, chemistry minor, computer science, cyber security, education, finance, food management, general science, graphic design or psychology. Details for each application area follow.

Accounting Application Area (25 credits)
ACT 210 Financial Accounting (3 credits)
ACT 220 Managerial Accounting (3 credits)
ACT 311 Financial Accounting and Reporting I (3 credits)
ACT 320 Financial Accounting and Reporting II (3 credits)
ACT 420 Accounting Information Systems (3 credits)
CIS 110 Computer Applications: Spreadsheets (3 credits)
CIS 160 Computer Science I (4 credits)

One of the following two courses:
- ACT 350 Survey of Federal Income Taxation (3 credits)
- ACT 430 Advanced Financial Management (3 credits)

Applied Design Application Area (25 credits)
ART 110 Design I (3 credits)
ART 115 Applied Design I (3 credits)
ART 202 Introduction to Web Design (3 credits)
ART 215 Applied Design II (3 credits)
ART 302 Web Design II (Advanced) (3 credits)
CIS 115 Introduction to Server Technology (1 credit)
CIS 160 Computer Science I (4 credits)
CIS 215 Database Fundamentals and SSP (2 credits)
CIS 315 Advanced SSP (3 credits)
Biology Application Area (26 credits)
BIO 112 General Biology I with Lab (4 credits)
BIO 114 General Biology II with Lab (4 credits)
BIO 212 General Genetics (3 credits)
BIO 318 Cell and Molecular Biology (3 credits)
CIS 160 Computer Science I (4 credits)
CIS 161 Computer Science II (4 credits)
CIS 210 Object-Oriented Programming (4 credits)

Plus one of the following pairs of courses (6 credits total from the list of courses that follow)
- CIS 355 Operating Systems and CIS 356 Operating System Security and Maintenance
- CIS 340 Concepts of Telecommunications and Networking and CIS 345 Network Security and Management
- CIS 355 Operating Systems and CIS 392 Ethical Hacking

OR any two of the following courses:
- CIS 380 Web Development Security
- CIS 385 Principles of Cryptography
- CIS 390 Personal Computer Security and Maintenance
- CIS 425 Digital Forensics and Analysis

Business Application Area (25 credits)
ECN 210 Principles of Micro Economics (3 credits)
ECN 220 Principles of Macro Economics (3 credits)
ACT 210 Financial Accounting (3 credits)
ACT 220 Managerial Accounting (3 credits)
FIN 310 Managerial Finance (3 credits)
CIS 110 Computer Applications: Spreadsheets (3 credits)
CIS 111 Computer Applications: Database (3 credits)
CIS 160 Computer Science I (4 credits)

Chemistry Minor as an Application Area (33 credits)
The chemistry application area is the same as a chemistry minor and is defined in the department of biological and physical sciences section of this catalog. Students who choose the Chemistry Minor application area will be required to take three computer science courses.

CHM 106 General Chemistry I with Lab (4 credits)
CHM 108 General Chemistry II with Lab (4 credits)
CHM 210 Organic Chemistry I (3 credits)
CHM 211 Organic Chemistry I lab (2 credits)
CHM 212 Organic Chemistry II (3 credits)
CHM 213 Organic Chemistry II lab (2 credits)
CHM 318 Biochemistry (3 credits)
CIS 160 Computer Science I (4 credits)
CIS 161 Computer Science II (4 credits)
CIS 210 Object-Oriented Programming (4 credits)

Computer Science Application Area (25 credits)
CIS 160 Computer Science I (4 credits)
CIS 161 Computer Science II (4 credits)
CIS 210 Object-Oriented Programming (4 credits)
CIS 250 Algorithms and Data Structures (4 credits)
Plus three courses chosen from among the 300 and 400-level CIS courses. (9 credits)

Cyber Security Application Area (24 credits)
CIS 125 Introduction to Cyber Crime and Security (3 credits)
CIS 160 Computer Science I (4 credits)
CIS 161 Computer Science II (4 credits)
CIS 210 Object-Oriented Programming (4 credits)
CIS 225 Information Security Policy Analysis and Implementation (3 credits)

Finance Application Area (28 credits)
ECN 210 Principles of Macro Economics (3 credits)
ECN 220 Principles of Micro Economics (3 credits)
ACT 210 Financial Accounting (3 credits)
FIN 310 Managerial Finance (3 credits)
FIN 320 Money and Banking (3 credits)
CIS 110 Computer Applications: Spreadsheets (3 credits)
CIS 160 Computer Science I (4 credits)

Two of the following four courses:
- FIN 325 Credit Management (3 credits)
- FIN 330 Investments (3 credits)
- FIN 335 Commercial Banking (3 credits)
- ACT 410 Auditing (3 credits)

Food Management Application Area (25-26 credits)
FCS 125 Food Service Sanitation (1 credit)
FCS 214 Nutrition and Wellness (2 credits)
FCS 221 Food Science Theory and Application (4 credits)
FCS 326 Quantity Food Service Purchasing and Operations (3 credits)
FCS 345 Management Principles and Practices in Food Service Operations (3 credits)
FCS 422 Food Pathways of Diverse Groups (3 credits)
FCS 458 Food Systems Management Practicum (3 credits)
CIS 110 Computer Applications: Spreadsheets (3 credits)
CIS 111 Computer Applications: Database (3 credits)

**General Science Application Area (27-28 credits)**
CHM 106 General Chemistry I with Lab (4 credits)

**One of the following 4 courses:**
- BIO 108 Introduction to Life Science w/Lab (3 credits)
- BIO 112 General Biology I w/Lab (4 credits)
- BIO 203 Science & Society (3 credits)
- CHM 108 General Chemistry II with Lab (4 credits)

PHY 218 Engineering Physics I with Lab (calculus-based) (4 credits)
PHY 220 Engineering Physics II with Lab (calculus-based) (4 credits)
CIS 160 Computer Science I (4 credits)
CIS 161 Computer Science II (4 credits)
CIS 210 Object-Oriented Programming (4 credits)

**Psychology Application Area (26 credits)**
PSY 100 Introduction to Psychology (3 credits)
PSY 327 Industrial/Organizational Psychology (3 credits)
PSY 330 Research Methods for Behavioral Sciences (3 credits)
PSY 335 Cognitive Psychology (3 credits)
PSY 391 Testing and Measurement for Behavioral Sciences (3 credits)
CIS 111 Computer Applications: Databases (3 credits)
CIS 160 Computer Science I (4 credits)
CIS 161 Computer Science II (4 credits)

**Baccalaureate Degree and Residency Requirements**
All requirements for an undergraduate degree are listed under academic policies and regulations in the undergraduate introductory section of this catalog. These requirements include a graduation requirement of at least one course in religion or theology.

**Teacher Certification Requirements**
Full information on teacher certification may be found in the section titled Teacher Certification at Fontbonne University following the graduate programs’ section in this catalog, as well as in the appropriate departmental sections of this catalog.

**General Education Requirements**
The 42 credit hours of general education requirements are explained in the undergraduate academic information section of this catalog. A course that meets a general education requirement may also meet a course requirement in the major or a course requirement in another discipline.

**Courses Required for the Major**
MTH 115 Introduction to Statistics (3 credits)
MTH 120 Discrete Mathematics (3 credits)
MTH 150 Calculus with Analytic Geometry I (4 credits)
MTH 151 Calculus with Analytic Geometry II (4 credits)
MTH 200 Linear Algebra (3 credits)
MTH 250 Calculus with Analytic Geometry III (4 credits)
MTH 305 Readings in the History of Mathematics (2 credits)
MTH 320 Elements of Geometry (3 credits)
MTH 325 Theory and Applications of Probability (3 credits)
CIS 365 Robotics (3 credits)
MTH 498 Senior Portfolio (1 credit)
MTH 499 Senior Synthesis (3 credits)

**Two of the following four courses:**
- MTH 300 Modeling and Numerical Approximation (3 credits)
- MTH 315 Advanced Statistics (3 credits)
- MTH 325 Theory and Applications of Probability (3 credits)
- CIS 365 Robotics (3 credits)
MTH 498 Senior Portfolio (1 credit)
MTH 499 Senior Synthesis (3 credits)

**Courses Required in Other Disciplines**
CIS 160 Computer Science I (4 credits)
CIS 161 Computer Science II (4 credits)
PSY 200 Developmental Psychology (3 credits)

**One of the following two courses:**
- BIO 112 General Biology I with lab (4 credits)
- BIO 108 Introduction to Life Science (3 credits)
One of the following two pairs of courses:

- PHY 218 Engineering Physics I with Lab (calculus-based) (4 credits) AND PHY 220 Engineering Physics II with Lab (calculus-based) (4 credits)
- CHM 106 General Chemistry I with Lab (4 credits) AND CHM 108 General Chemistry II with Lab (4 credits)

**Professional Courses Required For Certification**

EDU 268 Introduction to Learner Development (3 credits)
EDU 269 Critical Skills in the Teaching Profession with Field Experience (3 credits)
EDU 270 Introduction to Learner Diversity (3 credits)
EDU 271 Introduction to Content Planning, Delivery and Assessment (3 credits)
EDU 306 Analysis and Correction of Reading Difficulties (3 credits)
EDU 313: Methods & Practicum for Middle, Secondary, & Community Education (3 credits)
EDU 350 Methods of Teaching Reading and Writing in the Content Area (3 credits)
EDU 401 Classroom/Behavior Management Techniques – Middle/Secondary (3 credits)
EDU 447 Planning for Instruction and Assessment Middle and Secondary (3 credits)
EDU 451 Student Teaching at the Secondary Level (12-16 credits)

**SEE THE END OF THE SECTION ON MAJORS FOR THE COURSE REQUIREMENTS FOR MINORS, CERTIFICATES AND CONCENTRATIONS.**

**MAJOR IN BIOINFORMATICS**

This major includes courses in computer science, mathematics and biology and prepares students for a career in the field of bioinformatics. Specialists in bioinformatics use computational analyses to study the vast information provided by modern molecular biology, such as DNA and protein sequence analyses, fields which are growing at an unprecedented rate.

**Baccalaureate Degree and Residency Requirements**

All requirements for an undergraduate degree are listed under academic policies and regulations in the undergraduate introductory section of this catalog. These requirements include a graduation requirement of at least one course in religion or theology.

**General Education Requirements**

The 42 credit hours of general education requirements are presented in the undergraduate academic information section of this catalog. A course that meets a general education requirement may also meet a course requirement in the major or a course requirement in another discipline.

**Required Courses in Bioinformatics (12 credits)**

- BNF 200 Scientific Computing Languages (3 credits)
- BNF 210 Introduction to Bioinformatics (3 credits)
- BNF 301 Advanced Bioinformatics (3 credits)
- BNF 498 Senior Portfolio (1 Credit)
- BNF 499 Senior Synthesis (3 credits)

**Required Courses in Computer Science (20 credits)**

- CIS 160 Computer Science I (4 credits)
- CIS 161 Computer Science II (4 credits)
- CIS 250 Algorithms and Data Structures (3 credits)
- CIS 330 Database Management Systems (3 credits)
- CIS 355 Principles of Operating Systems (3 credits)

Four electives chosen from the following:

- CIS 310 Computer Architecture & Assembly Language (3 credits)
- CIS 340 Concepts of Telecommunications & Networking (3 credits)
- CIS 350 Compiling Theory & Programming Languages (3 credits)
- CIS 375 Software Engineering I (3 credits)
- CIS 475 Software Engineering II (3 credits)
- BNF 484 Internship (3 credits)

**Courses Required in Mathematics (19-21 credits)**

- MTH 120 Discrete Mathematics (3 credits)
- MTH 125 Biostatistics (3 credits)
- MTH 150 Calculus with Analytic Geometry I (4 credits)
- MTH 325 Theory and Applications of Probability (3 credits)

Two of the following courses:

- MTH 151 Calculus with Analytic Geometry II (4)
- MTH 200 Linear Algebra (3 credits)
- MTH 250 Calculus with Analytic Geometry III (4)
- MTH 300 Modeling and Numerical Approximation (3 credits)
- MTH 315 Advanced Statistics (3 credits)
- MTH 316 Non-Parametric Statistics (3 credits)
- MTH 430 Algebraic Structures (3 credits)

**Courses Required in Biology: (17 credits)**

- BIO 112 General Biology I with lab (4 credits)
- BIO 114 General Biology II with lab (4 credits)
- BIO 204 Modeling and Experimental Design (3 credits)
- BIO 212 Genetics (3 credits)
- BIO 318 Cell and Molecular Biology (3 credits)
SEE THE END OF THE SECTION ON MAJORS FOR THE COURSE REQUIREMENTS FOR MINORS, CERTIFICATES AND CONCENTRATIONS.

MAJOR IN COMPUTER SCIENCE

This major includes both theory and application and prepares students for a variety of challenging careers in the field of computer science.

Baccalaureate Degree and Residency Requirements

All requirements for an undergraduate degree are listed under academic policies and regulations in the undergraduate introductory section of this catalog. These requirements include a graduation requirement of at least one course in religion or theology.

General Education Requirements

The 42 credit hours of general education requirements are presented in the undergraduate academic information section of this catalog. A course that meets a general education requirement may also meet a course requirement in the major or a course requirement in another discipline.

Courses Required for the Major:

(41 credits)

CIS 120 Overview of Computer and Information Science (3 credits)
CIS 160 Computer Science I (4 credits)
CIS 161 Computer Science II (4 credits)
CIS 210 Object-Oriented Programming (4 credits)
CIS 250 Algorithms and Data Structures (4 credits)
CIS 310 Computer Architecture and Assembly Language (3 credits)
CIS 330 Database Management Systems (3 credits)
CIS 340 Concepts of Telecommunications and Networking (3 credits)
CIS 350 Compiling Theory and Programming Languages (3 credits)
CIS 355 Principles of Operating Systems (3 credits)
CIS 375 Software Engineering I (3 credits)
CIS 498 Senior Portfolio (1 credit)
CIS 499 Senior Synthesis (3 credits)

At most one of the two electives may be chosen from among the following five courses:

- CIS 394 Topics in Computer Science (1-4 credits)
- CIS 480 Research in Computer Science (1-4 credits)
- CIS 484 Internship in Computer Science (1-4 credits)
- CIS 490 Independent Study in Computer Science (1-4 credits)
- CIS 494 Advanced Topics in Computer Science (1-4 credits)

Courses Required in Mathematics:

(23 credits)

MTH 115 Introduction to Statistics (3 credits)
MTH 120 Discrete Mathematics (3 credits)
MTH 150 Calculus with Analytic Geometry I (4 credits)
MTH 151 Calculus with Analytic Geometry II (4 credits)
MTH 200 Linear Algebra (3 credits)
MTH 300 Modeling and Numerical Approximation (3 credits)
MTH 430 Algebraic Structures (3 credits)

Additional Courses Required in Mathematics and Science: Seven credit hours chosen from the following courses:

- BIO 108 Introduction to Life Science with Lab (3 credits)
- BIO 112 General Biology I with Lab (4 credits)
- BIO 114 General Biology II with Lab (4 credits)
- CHM 106 General Chemistry I with Lab (4 credits)
- CHM 108 General Chemistry II with Lab (4 credits)
- PHY 208 College Physics with Lab (4 credits)
- PHY 210 College Physics II with Lab (4 credits)
- MTH 250 Calculus with Analytic Geometry III (4 credits)
- MTH 315 Advanced Statistics (3 credits)
- MTH 385 Cryptography (3 credits)

SEE THE END OF THE SECTION ON MAJORS FOR THE COURSE REQUIREMENTS FOR MINORS, CERTIFICATES AND CONCENTRATIONS.

MAJOR IN CYBER SECURITY

This major presents the theory, processes and practices of cyber security, designed to prepare students in careers that include the protection of networks, computers, programs and data from damage or unauthorized access.

Baccalaureate Degree and Residency Requirements

All requirements for an undergraduate degree are listed under academic policies and regulations in the undergraduate introductory section of this catalog. These requirements include a graduation requirement of at least one course in religion or theology.
General Education Requirements
The 42 credit hours of general education requirements are presented in the undergraduate academic information section of this catalog. A course that meets a general education requirement may also meet a course requirement in the major or a course requirement in another discipline.

Courses Required for the Major
CIS 120 Overview of Computer and Information Science (3 credits)
CIS 125 Introduction to Cyber Crime and Security (3 credits)
CIS 160 Computer Science I (4 credits)
CIS 161 Computer Science II (4 credits)
CIS 210 Object-Oriented Programming (4 credits)
CIS 225 Information Security Policy Analysis and Implementation (3 credits)
CIS 250 Algorithms and Data Structures (4 credits)
CIS 300 Modeling and Numerical Approximation (3 credits)
CIS 310 Wireless Communication and Mobile Forensics (3 credits)
CIS 325 Digital Forensics and Analysis (3 credits)
CIS 399 Senior Synthesis (3 credits)

Two electives chosen from the following:
- CIS 390 Personal Computer Security and Maintenance (3 credits)
- CIS 410 Wireless Communication and Mobile Forensics (3 credits)

At most one of the three electives may be chosen from among the following five courses:
- CIS 395 Topics in Cyber Security (1-4 credits)
- CIS 481 Research in Cyber Security (1-4 credits)
- CIS 485 Internship in Cyber Security (1-4 credits)
- CIS 491 Independent Study in Cyber Security (1-4 credits)
- CIS 495 Advanced Topics in Cyber Security (1-4 credits)

Courses Required in Other Disciplines
MTH 115 Introduction to Statistics (3 credits)
MTH 120 Discrete Mathematics (3 credits)
MTH 150 Calculus with Analytic Geometry I (4 credits)
MTH 430 Algebraic Structures (3 credits)

Courses Recommended in Other Disciplines
PHL 221 Business Ethics (3 credits)
PSY 100 Introduction to Psychology (3 credits)
PSY 310 Social Psychology (3 credits)

MAJOR IN MANAGEMENT
INFORMATION SYSTEMS
This program emphasizes the relationship between computer science and business and prepares students for professional careers in areas such as systems analysis and design.

Baccalaureate Degree and Residency Requirements
All requirements for an undergraduate degree are listed under academic policies and regulations in the undergraduate introductory section of this catalog. These requirements include a graduation requirement of at least one course in religion or theology.

General Education Requirements
The 42 credit hours of general education requirements are presented in the undergraduate academic information section of this catalog. A course that meets a general education requirement may also meet a course requirement in the major or a course requirement in another discipline.

Courses Required for the Major
CIS 120 Overview of Computer and Information Science (3 credits)
CIS 160 Computer Science I (4 credits)
CIS 161 Computer Science II (4 credits)
CIS 210 Object-Oriented Programming (4 credits)
CIS 330 Database Management Systems (3 credits)
CIS 340 Concepts of Telecommunications and Networking (3 credits)
CIS 355 Principles of Operating Systems (3 credits)
CIS 356 Operating System Security and Administration (3 credits)
CIS 380 Web Development Security (3 credits)
CIS 385 Cryptography (3 credits)
CIS 392 Ethical Hacking (3 credits)
CIS 415 Server Security and Maintenance/Troubleshooting (3 credits)
CIS 425 Digital Forensics and Analysis (3 credits)
CIS 498 Senior Portfolio (1 credit)
CIS 499 Senior Synthesis (3 credits)

Three electives chosen from the following:
- CIS 300 Modeling and Numerical Approximation (3 credits)
- CIS 310 Computer Architecture and Assembly Language (3 credits)
- CIS 350 Compiling Theory and Programming Languages (3 credits)
- CIS 360 Artificial Intelligence (3 credits)
- CIS 365 Robotics (3 credits)
- CIS 372 Android Programming (3 credits) or CIS 373 iOS Programming (3 credits)
- CIS 475 Software Engineering II (3 credits)

At most one of the three electives may be chosen from among the following five courses.
- CIS 396 Topics in Management Information Systems (1-4 credits)

At most one of the three electives may be chosen from among the following five courses.
- CIS 396 Topics in Management Information Systems (1-4 credits)
• CIS 482 Research in Management Information Systems (1-4 credits)
• CIS 486 Internship in Management Information Systems (1-4 credits)
• CIS 492 Independent Study in Management Information Systems (1-4 credits)
• CIS 496 Advanced Topics in Management Information Systems (1-4 credits)

Courses Required in Other Disciplines
ECN 210 Principles of Macroeconomics (3 credits)
ECN 220 Principles of Microeconomics (3 credits)
ACT 210 Financial Accounting (3 credits)
MGT 210 Management Principles (3 credits)
MKT 210 Marketing Principles (3 credits)
FIN 310 Managerial Finance (3 credits)
MTH 115 Introduction to Statistics (3 credits)
MTH 120 Discrete Mathematics (3 credits)
MTH 150 Calculus with Analytic Geometry I (4 credits)

MINORS
A student must successfully complete, at Fontbonne, a minimum of 50 percent of the credit hours required for the minor.

MINOR IN APPLIED MATHEMATICS (20 CREDITS)
This minor provides students in other majors with a solid practical background in major branches of modern mathematics.

Courses Required for the Minor:
One of the following two courses:
• MTH 115 Introduction to Statistics (3 credits)
• MTH 125 Biostatistics (3 credits)
MTH 120 Discrete Mathematics (3 credits)
MTH 150 Calculus with Analytic Geometry I (4 credits)
MTH 151 Calculus with Analytic Geometry II (4 credits)

Two of the following six courses:
• MTH 300 Modeling and Numerical Approximation (3 credits)
• MTH 315 Advanced Statistics (3 credits)
• MTH 316 Non-Parametric Statistics (3 credits)
• MTH 320 Elements of Geometry (3 credits)
• MTH 325 Theory and Applications of Probability (3 credits)
• MTH 430 Algebraic Structures (3 credits)

Minor in Bioinformatics (25 credits)
Courses required for the Minor:
BIO 112 General Biology I with Lab (4 credits)
BIO 114 General Biology II with Lab (4 credits)
CIS 160 Computer Science I (4 credits)

CIS 161 Computer Science II (4 credits)
BNF 200 Scientific Computing Languages (3 credits)
BNF 210 Introduction to Bioinformatics (3 credits)
BNF 301 Advanced Bioinformatics (3 credits)

MINOR IN COMPUTER SCIENCE (22 CREDITS)
This minor provides a solid background in computer science.

Courses Required for the Minor:
CIS 160 Computer Science I (4 credits)
CIS 161 Computer Science II (4 credits)
CIS 210 Object-Oriented Programming (4 credits)
CIS 250 Algorithms and Data Structures (4 credits)

Two of the following four:
• CIS 310 Computer Architecture and Assembly Language (3 credits)
• CIS 340 Concepts of Telecommunications and Networking (3 credits)
• CIS 355 Principles of Operating Systems (3 credits)
• CIS 375 Software Engineering I (3 credits)

MINOR IN CYBER SECURITY (20 CREDITS)
This minor provides a solid background in cyber security.

Courses Required for the Minor:
CIS 125: Introduction to Cyber Crime and Security (3)
CIS 160: Computer Science I (4)
CIS 161: Computer Science II (4)
CIS 225: Information Security Policy Analysis and Implementation (3)

One of the following three pairs of courses:
• CIS 355 (Principles of Operating Systems) and CIS 356 (Operating System Security and Administration) (3 hours each)
• CIS 340 (Concepts of Telecommunications and Networking) and CIS 345 (Network Security and Management) (3 hours each)
• CIS 380 (Web Development Security) and CIS 415 (Server Security and Maintenance /Troubleshooting) (3 hours each)

MINOR IN MANAGEMENT INFORMATION SYSTEMS (21 CREDITS)
This minor offers exposure to the fundamentals of information systems.

Courses Required for the Minor:
CIS 160 Computer Science I (4 credits)
CIS 161 Computer Science II (4 credits)
CIS 210 Object-Oriented Programming (4 credits)
Three of the following six courses:

- CIS 225 Information Security Policy Analysis and Implementation (3 credits)
- CIS 250 Algorithms and Data Structures (3 credits)
- CIS 330 Database Management Systems (3 credits)
- CIS 372 Mobile Apps (3 credits)
- CIS 375 Software Engineering I (3 credits)
- CIS 475 Software Engineering II (3 credits)

CERTIFICATES

CERTIFICATE IN CYBER SECURITY

The certificate provides a solid foundation in cyber security and is designed with someone who has knowledge of a programming language but with little background in cyber security.

Courses Required for the Certificate (12 credits)

**Level 1 certificate** (12 credits): Designed for a person with 2 or more years of experience in the IT field with little or no experience in cyber security.

CIS 125: Introduction to Cyber Crime and Security
CIS 225: Information Security Policy Analysis and Implementation

Plus two additional 300 or 400-level cyber security major CIS courses, one of which may be a general computer science course that is a prerequisite or co-requisite for a specific cyber security course.

**Level 2 certificate** (12 credits): Designed for a person with 2 or more years of experience in the IT field with some experience in cyber security.

CIS 225: Information Security Policy Analysis and Implementation

Plus three additional 300 or 400-level cyber security major CIS courses, one of which may be a general computer science course that is a prerequisite or co-requisite for a specific cyber security course.

CERTIFICATE IN WEBSITE DEVELOPMENT

This certificate provides a solid foundation in all aspects of website development: graphics design, programming, and installation. See certificate program in the undergraduate academic policy and regulations section of this catalog.

Courses Required for the Certificate: (18-19 credits)

ART 115 Applied Design I (3 credits)
ART 202 Introduction to Web Design (3 credits)
ART 302 Web Design II (3 credits)

**One of the following two courses:**
- CIS 150 Fundamentals of Programming for Business (3 credits)
- CIS 160 Computer Science I (4 credits)
CIS 115 Introduction to Server Technology (1 credit)

CIS 215 Database Fundamentals and SSP (Server-Side Programming) (2 credits)
CIS 315 Advanced SSP (Server-Side Programming) (3 credits)

CONCENTRATIONS

Concentration in Cyber Security

(12 credits)

Courses Required for the Concentration:

CIS 125: Introduction to Cyber Crime and Security (3)
CIS 225: Information Security Policy Analysis and Implementation (3)

Two of the following three pairs of courses:

- CIS 355 (Principles of Operating Systems) and CIS 356 (Operating System Security and Administration) (3 hours each)
- CIS 340 (Concepts of Telecommunications and Networking) and CIS 345 (Network Security and Management) (3 hours each)
- CIS 380 (Web Development Security) and CIS 415 (Server Security and Maintenance /Troubleshooting) (3 hours each)

Concentration in Mathematics for Middle School (22 credits)

This concentration offers majors in middle school education exposure to areas of higher mathematics which will enhance their understanding of the middle school mathematics curriculum. It is intended to be one of two areas of concentration for middle school educators who wish to pursue two different concentration areas. A student must successfully complete, at Fontbonne, a minimum of 50 percent of the credit hours required for the concentration. See the middle school education major under the department of education/special education section of this catalog.

Courses Required for the Concentration:

(25-29 credits)
MTH 110 PreCalculus (4 credits) (if needed)
MTH 115 or MTH 125 Introduction to Statistics or Biostatistics (3 credits)
MTH 120 Discrete Mathematics (3 credits)
MTH 150 Calculus with Analytic Geometry I (4 credits)
MTH 300 Modeling and Numerical Approximation (3 credits)
MTH 305 Readings in the History of Mathematics (2 credits)
MTH 320 Elements of Geometry (3 credits)
MTH 430 Algebraic Structures (3 credits)
GENERAL STUDIES MAJOR
The general studies major offers students a path to graduation that combines generalized study with disciplinary focus, leading to a Bachelor of Arts degree. The department of mathematics and computer science offers the general studies major with the following emphases: applied mathematics, computer science and management information systems.

Major requirements include:
- Residency, Major, General Education, and Graduation Requirements as described in the Fontbonne University Catalog.
- A minimum GPA of 2.0 in the major is required for graduation.
- A minimum of 18 hours of course work in an area of emphasis, 15 hours of electives, as defined by departments, and a capstone experience.

Emphasis in applied mathematics:
Courses required for the emphasis:
MTH 115 Introduction to Statistics (3 credits)
MTH 120 Discrete Mathematics (3 credits)
MTH 150 Calculus with Analytic Geometry I (4 credits)
MTH 498 Senior Portfolio (1 credit)
MTH 499 Senior Synthesis (3 credits)
Five to seven credit hours selected from among the following courses:
- MTH 151 Calculus with Analytic Geometry II (4)
- MTH 300 Modeling and Numerical Approximation (3 credits)
- MTH 305 Readings in the History of Mathematics (2 credits)
- MTH 310 Differential Equations (3 credits)
- MTH 315 Advanced Statistics (3 credits)
- MTH 316 Non parametric statistics (3 credits)
- MTH 320 Elements of Geometry (3 credits)

Emphasis in computer science:
Courses required for the emphasis:
CIS 160 Computer Science I (4 credits)
CIS 161 Computer Science II (4 credits)
CIS 210 Object-Oriented Programming (4 credits)
CIS 250 Algorithms and Data Structures (4 credits)
CIS 498 Senior Portfolio (1 credit)
CIS 499 Senior Synthesis (3 credits)
Two of the following six courses:
- CIS 310 Computer Architecture and Assembly Language (3 credits)
- CIS 350 Compiling Theory and Programming Languages (3 credits)
- CIS 355 Operating Systems (3 credits)
- CIS 360 Artificial Intelligence (3 credits)
- CIS 365 Robotics (3 credits)
- CIS 375 Software Engineering I (3 credits)

Emphasis in management information systems:
Courses required for the emphasis:
CIS 160 Computer Science I (4 credits)
CIS 161 Computer Science II (4 credits)
CIS 210 Object-Oriented Programming (4 credits)
CIS 498 Senior Portfolio (1 credit)
CIS 499 Senior Synthesis (3 credits)
Two of the following four courses:
- CIS 330 Database Management Systems (3 credits)
- CIS 355 Operating Systems (3 credits)
- CIS 375 Software Engineering I (3 credits)
- CIS 475 Software Engineering II (3 credits)

ADVANCED PLACEMENT
An entering student who scores three, four or five on the Advanced Placement (AP) Test will receive equivalent placement and university credit. For students who score a three, four or five on the Calculus AB Examination, four credit hours are awarded for MTH150. For students who score a three, four or five on the Calculus BC Examination, eight credit hours are awarded for MTH150 and MTH151. For students who score a three, four or five on the Computer Science A Examination, credit may be given for a comparable computer science course per the agreement of the department. For students who score a three, four or five on the Statistics Examination, three credit hours are awarded for MTH115.

DUAL DEGREE PROGRAM IN ENGINEERING WITH THE UNIVERSITY OF MISSOURI–KANSAS CITY OR WITH WASHINGTON UNIVERSITY IN ST. LOUIS
Fontbonne University students may choose a dual degree program of study in collaboration with either the School of Computing and Engineering at the University of Missouri-Kansas City or the School of Engineering and Applied Science at Washington University in St. Louis. This program may be combined with any major, but is most easily achieved in conjunction with a major in applied mathematics or in biology. Because of the many engineering avenues, students must work closely with the dual degree advisor to map out a curriculum plan. A minimum cumulative grade point average (GPA) of B+ (3.25 on a 4.0 scale) or better, both overall and in science and mathematics courses, is required for admission to the engineering schools. Applicants with lower GPAs are considered on a case-by-case basis. Upon satisfactory completion of both programs, the student will be awarded bachelor of science degrees from both Fontbonne University and the University of Missouri-Kansas City or
from both Fontbonne University and Washington University in St. Louis.

**COURSES**

**BIOINFORMATICS COURSES**

**BNF 200 Scientific Computing Languages (3 credits)**
Covers an introduction to scripting languages and their applications to scientific data (currently Python programming language and the R-statistical analysis program will be taught). Prerequisites: (MTH 125 or MTH 115) and BIO 112 (recommended for Biology majors and for Bioinformatics majors or minors). SP

**BNF 210 Introduction to Bioinformatics (3 credits)**
Provides an overview of bioinformatics, covering a variety of techniques used to analyze biological sequences. Topics include public sequence databases, Basic Local Alignment Research Tool (BLAST), pairwise and multiple sequence alignment, molecular phylogeny and evolution, protein analysis and proteomics, microarray expression profiling. The code of ethics for professionals in bioinformatics will be addressed. Prerequisites BIO 212 and BNF 200. FA (odd)

**BNF 280 Research in Bioinformatics (1-3 credits)**
Provides an opportunity for a student to conduct research on a topic of interest in Bioinformatics. Research will be conducted in a non-classroom, individualized environment utilizing the skills and knowledge obtained in bioinformatics, computer science and statistics courses. Prerequisites: consent of the instructor and department chair. Offered as needed.

**BNF 284 Internship in Bioinformatics (1-4 credits)**
Provides a supervised, off-campus, field-based experience, in bioinformatics, at an approved site specifically related to the career goals of the student. The purpose of the course is to integrate and apply academic knowledge and skills to the professional environment. Credits are determined by the number of hours that a student works at the internship site. Offered on P/F basis. Prerequisite: BNF 210. Offered as needed.

**BNF 480 Research in Bioinformatics (1-4 credits)**
Provides an opportunity for a student to conduct research on a topic of interest in Bioinformatics. Research will be conducted in a non-classroom, individualized environment utilizing the skills and knowledge obtained in bioinformatics, computer science and statistics courses. Prerequisites: (Junior/senior status) and consent of the department chair and instructor. Offered as needed.

**BNF 484 Internship in Bioinformatics (1-4 credits)**
Provides a supervised, off-campus, field-based experience, in bioinformatics, at an approved site specifically related to the career goals of the student. The purpose of the course is to integrate and apply academic knowledge and skills to the professional environment. Credits are determined by the number of hours that a student works at the internship site. Offered on P/F basis. Prerequisite: BNF 210. Offered as needed.

**BNF 498 Senior Portfolio (1 credit)**
Provides students with the opportunity to create and submit their final portfolio, which is required for graduation. Some of the items in the portfolio are: (1) a self-assessment in relation to how well the student outcomes for program were attained, (2) statements about the professional, ethical, legal, social and security issues and responsibilities associated with the chosen field of study, (3) statements about plans for future professional growth and (4) a professional resume. Prerequisites: Senior status and major approval. FA SP

**BNF 499 Senior Synthesis (3 credits)**
Allows the student to explore and area in her/his major that either (1) was not covered in the major curriculum or (2) can and will be explored in more depth than in previous coursework. Prerequisites: Senior Status and major approval. Prerequisite: Senior status and major approval. FA SP

**COMPUTER SCIENCE, CYBER SECURITY AND MANAGEMENT INFORMATION SCIENCE COURSES**

**CIS 100 Computer Technology: Issues and Applications (3 credits)**
Provides an introduction to applications of information technology for non-computer science majors. The course covers general computer knowledge associated with computer history, hardware, software, operating systems, and computer networks. Students learn and/or reinforce skills related to word processing, spreadsheets, presentation and publishing tools as well as to emerging internet-based tools. Social and ethical issues related to technology are considered, such as piracy, viruses, and
security issues. Course will include the development of an application project by the student. FA, SP, SU

**CIS 103 Computer Technology: Applications for Educators (3 credits)**
Provides an introduction to the uses of technology in an educational setting. Emphasis of the course will be on integrating technology with classroom instruction. Students will learn skills related to word processing, spreadsheets and presentations as well as to evolving internet-based technologies. Promoting life-long learning and an understanding of the legal and ethical use of computer/technology resources will be an integral part of the course. FA, SP

**CIS 110 Computer Applications: Spreadsheet (3 credits)**
Covers capabilities of Windows-based spreadsheet software. Presents spreadsheet terminology, basic commands, and features for data formatting, calculation, and creating tables and charts. Additional topics include building applications for data referencing, analysis and reports, advanced functions, and macros. Course will include development of a significant spreadsheet project by the student. FA, SP

**CIS 111 Computer Applications: Database (3 credits)**
Covers the skills to design and implement a database as well as data entry, editing, and manipulation using Windows-based DBMS software. Includes applications of managing tables and files, using and creating queries, and designing forms and reports. Course will include development of a significant database project by the student. FA

**CIS 115 Introduction to Server Technology (1 credit)**
An introduction to server technology. Topics include system architecture, file servers, FTP servers, web servers, database servers with an emphasis on server installation and configuration. FA (Even)

**CIS 120 Overview of Computer and Information Science (3 credits)**
An introduction to computer and information science. Covers issues associated with both hardware and software, such as computer history, computer terminology, algorithm development and analysis with an emphasis on flowcharting, pseudo code and design, basic number systems, data storage, data manipulation, operating systems, networks, and computer engineering. Additional topics include programming languages, software engineering, data structures, file structures, database systems, the Internet, and artificial intelligence. Prerequisite: Grade of B or better in MTH 095 or competency in arithmetic and algebra. FA

**CIS 125 Introduction to Cyber Crime and Security (3 credits)**
Introduces students to the fields of cyber crime and security. Covers issues associated with different types of threats, attacks, and methods employed against these threats and attacks. Practical cryptography, securities of operating systems, computer networks, database systems, and other types of computer systems will also be introduced. SP

**CIS 150 Fundamentals of Programming for Business (3 credits)**
This course introduces programming for solving business-related application problems. Topics include program design, the integrated development environment, graphical user interface, data types, control structures, and sub/function procedures. Additional topics include database programming and exception handling. Offered as needed.

**CIS 160 Computer Science I (4 credits)**
Emphasis on programming in C and introduction to C++, including structural programming concepts, simple data types and structures, C and C++ syntax, operators, control structures and pointers. Lab exercises include techniques of coding, program design, and debugging. Students in this course who are majoring in mathematics, computer science, cyber security or management information science must earn grades of B- or better in this course to progress to CIS 161 and/or CIS 210. Prerequisites: Grade of B or better in MTH 095 or competency in arithmetic and algebra. For CS, Cyber Security or MIS majors, CIS120 is a pre- or co-requisite. FA

**CIS 161 Computer Science II (4 credits)**
Continuation of Computer Science I, with extensive programming in C++ language and introduction to Java. Includes string handling, file I/O, storage and static variables, structures, bitwise operations, and C++ library. Students in this course who are majoring in mathematics, computer science, cyber security or management information systems must earn grades of B- or better to progress to CIS 210 and above. Prerequisite: CIS 120 and CIS 160. SP

**CIS 170 Visual Programming (3 credits)**
Introduction to visual programming using Windows-based packages. Exploring tools and utilities of Windows graphic user interface and multimedia capacity, such as menus, buttons, and other controls. Topics also include using object-linking and embedding, dynamically-linked libraries, dynamic data exchange, and Internet-related applications. Lab exercises include language syntax and coding, data structures, links and controls, parameter passing. Prerequisite: CIS 160 or consent of instructor. Offered as needed.
CIS 210 Object-Oriented Programming (Java) (4 credits)
Introduction to concepts of abstract data type and inheritance. Topics include the fundamentals of object-oriented program design, object-oriented programming using Java. Lab exercises include introductory to intermediate level software analysis and design. Prerequisite: CIS 161. FA

CIS 215 Database Fundamentals and SSP (Server-side Programming) (2 credits)
An introduction to database fundamentals and server-side programming. Topics include table design and management, creating and using queries, file management, and writing programs on the server to support a web site. Prerequisites: CIS 115 and (CIS 150 or CIS 160). FA (Even)

CIS 225 Information Security Policy Analysis and Implementation (3 credits)
Covers information assurance, cyber security policies, analysis procedures, risk assessments, and implementation of security policies. Prerequisites: CIS 125 is a pre- or co-requisite. FA

CIS 250 Algorithms and Data Structures (4 credits)
Introduction to the principles of algorithm analysis, abstract data types covering stacks, queues, lists, trees and recursion, algorithms of sorting and searching. Additional topics include graph algorithms, text compression, dynamic programming, and randomized algorithms. Prerequisite: CIS 210. SP

CIS 280 Research in Computer Science (1-3 credits)
Provides an opportunity for a student to conduct research on a topic of interest in computer science, cyber security or management information systems. Research will be conducted in a non-classroom, individualized environment utilizing the skills and knowledge obtained in computer science courses. Prerequisite: consent of the department chair and instructor. Offered as needed.

CIS 282 Research in Management Information Systems (1-3 credits)
Provides an opportunity for a student to conduct research on a topic of interest in cyber security. Research will be conducted in a non-classroom, individualized environment utilizing the skills and knowledge obtained in management information systems courses. Prerequisite: consent of the department chair and instructor. Offered as needed.

CIS 284 Internship in Computer Science (1-3 credits)
Provides a supervised, off-campus, field-based experience, in computer science, cyber security or management information systems, at an approved site specifically related to the career goals of the student. The purpose of the course is to integrate and apply academic knowledge and skills to the professional environment. Credits are determined by the number of hours that a student works at the internship site. Offered on P/F basis. Prerequisites: CIS 161. Offered as needed.

CIS 285 Internship in Cyber Security (1-3 credits)
Provides a supervised, off-campus, field-based experience, in computer science, cyber security or management information systems, at an approved site specifically related to the career goals of the student. The purpose of the course is to integrate and apply academic knowledge and skills to the professional environment. Credits are determined by the number of hours that a student works at the internship site. Offered on P/F basis. Prerequisites: CIS 161 and CIS 225. Offered as needed.

CIS 286 Internship in Management Information Systems (1-3 credits)
Provides a supervised, off-campus, field-based experience, in computer science, cyber security or management information systems, at an approved site specifically related to the career goals of the student. The purpose of the course is to integrate and apply academic knowledge and skills to the professional environment. Credits are determined by the number of hours that a student works at the internship site. Offered on P/F basis. Prerequisites: CIS 161 Offered as needed.

CIS 293 Topics in the Business Computing Environment (3 credits)
Course addresses topics of current interest in the business computing environment. Offered as needed.

CIS 300 Modeling and Numerical Approximation (3 credits)
Principles of model construction with selected case studies from various fields. Also, techniques of numerical approximation. Prerequisites: CIS 160 and MTH 150. SP (Odd)
CIS 310 Computer Architecture and Assembly Language (3 credits)
Topics covering theoretical aspects and concepts of hardware and computer systems including logic gates, combinational and sequential circuits, memory and registers, control logic design, instructions and addressing. Teaches programming in one assembly language. Prerequisites: CIS 161 and (CIS 120 or MTH 120). FA (Even)

CIS 315 Advanced Server-side Programming (3 credits)
This course teaches the advanced techniques of server-side programming over the Internet. Topics include using session control, accessing back-end database servers, E-commerce security issues, interacting with file systems, implementing secure transactions, and using network and protocol functions. Prerequisite: CIS 215. SP

CIS 316 Business Application Development (3 credits)
Course covers the essentials of the COBOL programming language in the context of business application development. Topics include the fundamental design principles of business applications, application development processes, and program implementations using COBOL. Prerequisite: CIS 150 or CIS 160 or consent of the instructor. Offered as needed.

CIS 330 Database Management Systems (3 credits)
Provides comprehensive coverage of relational databases including data management, database design and evaluation, query design and evaluation, and web interfacing. Students will learn all the steps from data modeling (ER diagrams) to table generation and linking to accessing and querying using SQL. Prerequisite: CIS 161. FA (Odd).

CIS 340 Concepts of Telecommunications and Networking (3 credits)
Introduction to the principles and practice of data communication and computer networking. Topics include the theoretical aspects of various methods, media, protocols, data compression, and security in telecommunication. Also includes lab exercises of network and remote access configuration and data exchange. Prerequisites: CIS 161 and (CIS 120 or MTH 120 and (MTH 150 or consent of the instructor)). FA (Odd)

CIS 345 Network Security and Management (3 credits)
Covers network security and management with an emphasis on computer network security, implementation, and management. Topics include network core devices (such as routers and switches) setup, configuration, maintenance, security, and firewall management. Prerequisites: CIS 120 and CIS 225. CIS 340 is a pre- or co-requisite. FA (Odd)

CIS 350 Compiling Theory and Programming Languages (3 credits)
Comparative study of programming languages and concepts such as grammars and parse trees, interpretation and compilation, and generation of optimal code. A number of programming languages will be studied relative to their history, design implementation, and evaluation. Prerequisites: CIS 250 and (CIS 120 or MTH 120). SP (Even)

CIS 355 Principles of Operating Systems (3 credits)
Topics cover the theoretical aspects and concepts of operating systems including system structures, scheduling, concurrent processes and deadlock handling, storage and file management, system protection and security. Also includes lab exercises in UNIX system configuration. Prerequisites: (CIS 120 or MTH 120). SP (Even)

CIS 356 Operating System Security and Administration (3 credits)
Covers operating system security and administration with an emphasis on operating system installation, configuration, administration, and security. Topics include operating system setup, user account control, file system protection, activity logging, system call auditing, address space management, and intrusion detections. Prerequisites: CIS 120, CIS 125 and CIS 225. CIS 355 is a pre- or co-requisite. SP (Even)

CIS 360 Artificial Intelligence (3 credits)
A survey of concepts, techniques, and applications of AI, including knowledge abstraction and representation, knowledge-based systems, heuristic searching, natural language understanding, machine learning, and automated reasoning. Use of LISP or PROLOG, or other appropriate language, to develop a substantial project in expert systems is required. Prerequisite: CIS 250 or consent of the instructor. Offered as needed.

CIS 365 Robotics (3 credits)
Introduces students to the basics of modeling, design, planning, programming and control of robot systems. Topics include an exploration of the principles and algorithms for computation in the physical world, kinematics, geometric reasoning, motion planning, behavior-based artificial intelligence and some philosophical questions pertaining to the nature of intelligence in the physical world. Prerequisites: CIS 210, CIS 250, MTH 151 FA (Even)
CIS 372 Android Programming (3 credits)
Provides students with the fundamental knowledge and skills needed to design and build Android apps using the most current Android programming platform. Students will complete multiple Android apps that run on a real Android smartphone/tablet, starting from simpler ones to complex ones. (Note, students may choose either CIS 372 or 373 to fulfill an elective choice for the BS in computer science or management information systems.) Prerequisite: CIS 210. SP (Even)

CIS 373 iOS Programming (3 credits)
Provides students with the fundamental knowledge and skills needed to design and build iOS apps using the most current iOS programming platform. Students will complete multiple iOS applications that run on iPhones/iPads, starting from simple ones to complex ones. (Note, students may choose either CIS 372 or 373 to fulfill an elective choice for the BS in computer science or management information systems.) Prerequisite: CIS 161. SP (even)

CIS 375 Software Engineering I (3 credits)
Course introduces classical and object-oriented software engineering principles. Topics include the scope of software engineering, the software process, software life cycle models, documentation, tools, testing, quality assurance, project management, object-oriented analysis and design, system views, patterns, and modeling using UML, in the context of generic object-oriented development process. Students are required to design and build software projects through team effort. The projects cover the principal system development life-cycle phases. Prerequisite: CIS 161. FA (Even)

CIS 380 Web Development Security (3 credits)
Covers web development security with an emphasis on the fundamental principles of security in web applications. Topics include web browser security, server-side web application security and web database security. Prerequisites: CIS 120 and CIS 125. CIS 225 is a pre- or co-requisite. FA (Even)

CIS 385 Principles of Cryptography (3 credits)
Introduces the fundamentals of cryptography including the concept of obscuring functions, cryptographic techniques, types of ciphers, proper use of ciphers, ethical uses of cryptography and decryption practices. Topics also include randomness, polymorphism and current trends in cryptography. Prerequisites: CIS 225 and MTH 120. FA (Even).

CIS 390 Personal Computer Security and Maintenance (3 credits)
Covers methods to keep personal computers running efficiently and the information housed on those computers safe. Provides practical information on computer operation and surveys information storage practices and common hacking techniques employed against personal computers. Prerequisite: CIS 225. SP (Even).

CIS 392 Ethical Hacking (3 credits)
Introduces the tools and techniques associated with the cybersecurity practice known as ethical hacking or penetration testing. The course covers not only laws and regulations, but also the steps in penetration testing such as planning, scanning, exploiting and result reporting. Students are taught how system vulnerabilities are discovered and exploited. They will also learn how to avoid vulnerabilities and how to react and defend if they do occur as well as how to design controls to prevent future attacks in real-life situations. Other topics include: system, wireless, web, and database hacking; penetration testing methods and tools. The course is designed to provide a rich learning experience to students through the use of hands-on exercises and discussions on the course material. Prerequisites: CIS 125 and CIS 161. CIS 355 is a pre or co-requisite. SP (Odd)

CIS 394 Topics in Computer Science (1-4 credits)
Course generated by the department to supplement regular course listings. Addresses topics in computer science. Prerequisite: CIS 250 and (Junior/senior status or consent of instructor). Offered as needed.

CIS 395 Topics in Cyber Security (1-4 credits)
Course generated by the department to supplement regular course listings. Addresses topics in cyber security. Prerequisite: CIS 250 and (Junior/senior status or consent of instructor). Offered as needed.

CIS 396 Topics in Management Information Systems (1-4 credits)
Course generated by the department to supplement regular course listings. Addresses topics in management information systems. Prerequisite: CIS 210(Junior/senior status or consent of instructor). Offered as needed.

CIS 410 Wireless Communication and Mobile Forensics (3 credits)
Covers the fundamental principles of wireless communication and mobile forensics. Topics include wireless links, protocols, cellular access, mobile Internet Protocol (IP), and mobility management. The techniques of collecting and analyzing information from mobile devices for forensic investigations will also be studied. Prerequisites: CIS 120 and CIS 125. CIS 225 is a pre-or co-requisite. SP (Odd)
CIS 415 Server Security and Maintenance/Troubleshooting (3 credits)
Covers the fundamental security principles of different types of servers, such as file servers, database servers, web servers, File Transfer Protocol (FTP) servers, mail servers, and Domain Name System (DNS) servers. Server installation, configuration, maintenance, and troubleshooting will be studied. Prerequisites: CIS 120 and CIS 125. CIS 225 is a pre- or co-requisite. FA (Even)

CIS 425 Digital Forensics and Analysis (3 credits)
Presents the technical and legal issues facing computer crime investigators and digital forensic examiners. Students will learn effective and appropriate forensic response strategies to support cyber crime investigative efforts. The focus is on acquiring the skills needed to identify and collect potential digital evidence, to analyze that evidence using chain of custody and to report forensic findings. Prerequisite: CIS 225. FA (Odd)

CIS 475 Software Engineering II (3 credits)
Continuation of Software Engineering I. Topics include the scope of system design, object analysis and design, implementing, testing, configuration management, and use of various tools that aid software development. Students are required to design, implement, test, and release software projects through team effort. The projects cover the principal system development lifecycle phases. Prerequisite: CIS 375 SP (Odd)

CIS 480 Research in Computer Science (1-4 credits)
Provides an opportunity for a student to conduct research on a topic of interest in computer science. Research will be conducted in a non-classroom, individualized environment utilizing the skills and knowledge obtained in computer sciences courses. Prerequisites: (juniorsenior status) and the consent of the department chair and instructor. Offered as needed.

CIS 481 Research in Cyber Security (1-4 credits)
Provides an opportunity for a student to conduct research on a topic of interest in cyber security. Research will be conducted in a non-classroom, individualized environment utilizing the skills and knowledge obtained in cyber security courses. Prerequisites: (junior/senior status) and the consent of the department chair and instructor. Offered as needed.

CIS 482 Research in Management Information Systems (1-4 credits)
Provides an opportunity for a student to conduct research on a topic of interest in management information systems. Research will be conducted in a non-classroom, individualized environment utilizing the skills and knowledge obtained in management information system courses. Prerequisites: (junior/senior status) and the consent of the department chair and instructor. Offered as needed.

CIS 484 Internship in Computer Science (1-4 credits)
Provides a supervised, off-campus, field-based experience, in computer science at an approved site specifically related to the career goals of the student. The purpose of the course is to integrate and apply academic knowledge and skills to the professional environment. Credits are determined by the number of hours that a student works at the internship site. Offered on P/F basis. Prerequisites: at least two 300-level computer science courses. Offered as needed.

CIS 485 Internship in Cyber Security (1-4 credits)
Provides a supervised, off-campus, field-based experience, in cyber security at an approved site specifically related to the career goals of the student. The purpose of the course is to integrate and apply academic knowledge and skills to the professional environment. Credits are determined by the number of hours that a student works at the internship site. Offered on P/F basis. Prerequisites: at least two 300-level cyber security courses. Offered as needed.

CIS 486 Internship in Management Information Systems (1-4 credits)
Provides a supervised, off-campus, field-based experience, in management information systems, at an approved site specifically related to the career goals of the student. The purpose of the course is to integrate and apply academic knowledge and skills to the professional environment. Credits are determined by the number of hours that a student works at the internship site. Offered on P/F basis. Prerequisites: at least two 300-level computer science courses. Offered as needed.

CIS 490 Independent Study in Computer Science (1-4 credits)
Study in a specialized area, to be arranged according to student need and interest. Prerequisite: Junior/senior status and consent of instructor. Offered as needed.

CIS 491 Independent Study in Cyber Security (1-4 credits)
Study in a specialized area, to be arranged according to student need and interest. Prerequisite: Junior/senior status and consent of instructor. Offered as needed.

CIS 492 Independent Study in Management Information Systems (1-4 credits)
Study in a specialized area, to be arranged according to student need and interest. Prerequisite: Junior/senior status and consent of instructor. Offered as needed.
CIS 494 Advanced Topics in Computer Science (1-4 credits)
Topics similar to those offered in CIS 394, offered on an as-needed basis, at a more advanced level. Prerequisites: CIS 250 and senior status. Offered as needed.

CIS 495 Advanced Topics in Cyber Security (1-4 credits)
Topics similar to those offered in CIS 395, offered on an as-needed basis, at a more advanced level. Prerequisites: CIS 250 and senior status. Offered as needed.

CIS 496 Advanced Topics in Management Information Systems (1-4 credits)
Topics similar to those offered in CIS 396, offered on an as-needed basis, at a more advanced level. Prerequisites: CIS 250 and senior status. Offered as needed.

CIS 498 Senior Portfolio (1 credit)
Provides students with the opportunity to create and submit their final portfolio, which is required for graduation. Some of the items in the portfolio are: (1) a self-assessment in relation to how well the student outcomes for program were attained, (2) statements about the professional, ethical, legal, social and security issues and responsibilities associated with the chosen field of study, (3) statements about plans for future professional growth and (4) a professional resume. Prerequisites: Senior status and major approval. FA SP

CIS 499 Senior Synthesis (3 credits)
Allows the student to explore and area in her/his major that either (1) was not covered in the major curriculum or (2) can and will be explored in more depth than in previous coursework. Prerequisites: Senior Status and major approval. Prerequisite: Senior status and major approval. FA SP

MATHEMATICS COURSES
MTH 091 College Mathematics Skills (3 credits)
Emphasizes computing with whole numbers, fractions, decimals, and integers; solving word problems with whole numbers, fractions, decimals, and integers; solving basic linear equations; Coordinate geometry is introduced. In general, students must earn a grade of C- or better in this course to satisfy the prerequisite for further mathematics courses. However, students in this course who intend to choose a major in the department must earn grades of A- or better in this course to progress to MTH 095. Credit does not apply toward the 120-hour degree requirement. Offered as needed.

MTH 095 Fundamentals of Algebra (4 credits)
Study of basic algebra required for all mathematics courses at Fontbonne. Topics include: real numbers, exponents, radicals, rational expressions, linear equations and inequalities, polynomials, quadratic equations, systems of linear equations, functions, and graphing. In general, students must earn a grade of C- or better in this course to satisfy the prerequisite for further mathematics courses. However, students in this course who intend to choose a major in the department must earn grades of A- or better in this course to progress to MTH 105 and/or CIS 160. Prerequisite: A grade of C- or better in MTH 091 or competency in arithmetic. Credit will be applied as elective credit to the 120-hour degree requirement. FA, SP

MTH 100 Topics in Algebra for Statistics (2 credits)
This course covers the essential topics in algebra that are needed specifically to do common statistical calculations. Topics include: sets, signed numbers, exponents and radicals, algebraic and rational expressions, factoring, linear equations, an introduction to two-dimensional graphing, and an introduction to quadratic equations. Application problems are included. (Topics may be added at the instructor’s discretion, as time allows, but not deleted from the preceding list.) Offered as needed.

MTH 102 Mathematics for Elementary School Teachers: Number Systems, Geometry and Measurement (3 credits)
Problem solving, elementary set theory and logic, development of the real number system. Topics in geometry and statistics. Enrollment limited to students in the following programs: Pathways, Deaf Education, and Early Childhood, and to students in Elementary Education/Special Education, who have transferred into Fontbonne with previous mathematics credit. Prerequisites: Grade of C- or better in MTH 095 or consent of the instructor. SP

MTH 103 Excursions into Modern Mathematics (3 credits)
This course presents mathematics in such a way that the student can see immediate connections between what is learned in the mathematics classroom and real-life problems. It is geared toward liberal arts majors. The choice of topics is such that a heavy mathematical infrastructure is not needed. A fundamental objective of the course is to develop an appreciation for the aesthetic elements of mathematics. Prerequisites: Grades of C- or better in MTH 095 or competency in arithmetic and algebra. SP

MTH 104 Mathematics for Elementary School Teachers: Number Systems (3 credits)
Examines the structures and properties of mathematics, while focusing on the development of problem-solving skills. Includes the study of sets, functions, whole numbers, fractions, number theory and integers. Considers applications of rational numbers, decimals, and percents. Intended for prospective elementary school teachers.
MTH 105 College Algebra (4 credits)
Topics covered: sets, number systems, polynomials, equations and graphing, inequalities, relations and functions, systems of equations, exponential and logarithmic equations, rational zeros of polynomials, matrices and determinants, sequences and series. Students in this course who choose a major in the department must earn grades of B- or better in this course to progress to MTH 150. Prerequisites: Grade of C- or better in MTH 095, or competency in arithmetic and algebra. FA, SP

MTH 106 Mathematics for Elementary School Teachers: Geometry and Measurement (3 credits)
Examines the structures and properties of mathematics through problem solving. Includes the study of geometry, measurement and probability and statistics. Utilizes appropriate grade-level technology. Intended for prospective elementary school teachers. (Students, who have previously completed MTH 102, cannot receive credit for this course.) Prerequisites: Grade of C- or better in MTH 104 or its equivalent. SP

MTH 108 Trigonometry (2 credits)
Covers the standard introductory trigonometry topics: the six standard trigonometric functions, right triangle trigonometry, radian measure, graphs of function and their inverses, identities and formulas, equations and triangles. MTH 108 or MTH 110 is a prerequisite for MTH 150. Offered as needed.

MTH 110 Precalculus (4 credits)
Prepares students for MTH 150, Calculus with Analytic Geometry I. The course is an in-depth study of the concept of a function. Several classes of functions including linear, quadratic, polynomial, rational, exponential, logarithmic, and trigonometric functions are studied. Within each class of functions, characteristics of the function are emphasized such as the basic form and graph, equations and inequalities associated with the function, and applications. Both algebraic and graphical techniques will be used throughout the course. Prerequisite: Grade of B or higher in MTH 095 or equivalent knowledge. FA

MTH 115 Introduction to Statistics (3 credits)
Topics covered: descriptive statistics, probability, binomial, chi-squared and normal probability distributions, tests of hypotheses, linear correlation and regression, and analysis of variance. Prerequisites: Grades of C- or better in MTH 095 or competency in arithmetic and algebra. FA, SP

MTH 120 Discrete Mathematics (3 credits)
Topics include: truth tables, propositional logic, sets, binary and equivalence relations, functions, matrices, binary, octal and hexadecimal number systems, combinatorics, proof by induction and recursion, and algorithms. Prerequisite: Competency in arithmetic and algebra. FA

MTH 125 Biostatistics (3 credits)
Introduces the application of statistical concepts to biological problems over a broad range of fields including biological sciences, medicine and public health. The evaluation of experimental design in biological studies will be addressed. Topics covered include: scientific method, data representation, descriptive statistics, inferential statistics and data analysis, normal probability distributions, estimation and hypotheses testing, chi-squared distributions and the analysis of variance. An appropriate statistical program (currently R) will be used as a tool in the course. Prerequisite: MTH 105 or MTH 110 (or equivalent knowledge) and BIO 112 or an introductory biology course (can be concurrent). FA

MTH 150 Calculus with Analytic Geometry I (4 credits)
Differential and integral calculus of the algebraic and transcendental functions associated with analytic geometry. Prerequisites: Three years of high school mathematics including trigonometry with grades of B or better, or MTH 110 (with a grade of C- or better), or (MTH 105 and MTH 108) with grades of C- or better, or the consent of the instructor. SP

MTH 151 Calculus with Analytic Geometry II (4 credits)
A continuation of MTH 150, continuation of differential and integral calculus; infinite series. Prerequisite: MTH 150 with grades of C- or better. FA

MTH 200 Linear Algebra (3 credits)
Topics include: vector spaces, linear transformations, and matrices. Pre- or co-requisite: MTH 151. FA (Even)

MTH 250 Calculus with Analytic Geometry III (4 credits)
Vector calculus, the differential, multivariate calculus with applications. Prerequisite: MTH 151. SP

MTH 280 Research in Mathematics (1-3 credits)
Provides an opportunity for a student to conduct research on a topic of interest in mathematics. Research will be conducted in a non-classroom, individualized environment utilizing the skills and knowledge obtained in applied mathematics courses. Prerequisite: consent of department chair and instructor. Offered as needed.
MTH 284 Internship in Applied Mathematics (1-3 credits)
Provides a supervised, off-campus, field-based experience, in applied mathematics, at an approved site specifically related to the career goals of the student. The purpose of the course is to integrate and apply academic knowledge and skills to the professional environment. Credits are determined by the number of hours that a student works at the internship site. Offered on P/F basis. Prerequisites: MTH 115 and MTH 150. Offered as needed.

MTH 294 Topics in Mathematics (1-3 credits)
Course generated by the department to supplement regular course listings. Addresses topics in mathematics. Offered on a one-time or irregular basis.

MTH 300 Modeling and Numerical Approximation (3 credits)
Principles of model construction with selected case studies from various fields. Also, techniques of numerical approximation. Prerequisites: MTH 150 and CIS 160. SP (Odd)

MTH 305 Readings in the History of Mathematics (2 credits)
Readings in the history of mathematics and in the mathematics contributions of both Western and non-Western cultures. The interplay between mathematics and culture is emphasized. Prerequisites: MTH 150; MTH 120. SP (Odd)

MTH 310 Differential Equations (3 credits)
Techniques for solving ordinary differential equations. Investigation of existence and uniqueness of solutions; a variety of applications. Prerequisite: MTH 151. SP (Odd)

MTH 315 Advanced Statistics (3 credits)
Covers widely used statistical tools such as linear and nonlinear regression, analysis of variance, expected mean squares and pooling. Students will use a statistical package to analyze data sets. Prerequisites: (MTH 115 or MTH 125) and MTH 150 or consent of instructor. FA (Even)

MTH 316 Non-Parametric Statistics (3 credits)
An introduction to nonparametric statistical procedures. Topics include order statistics, rank order statistics and scores, tests of goodness of fit, linear rank tests for location and scale problems, applications. Prerequisite: MTH 115. FA (Odd)

MTH 320 Elements of Geometry (3 credits)
Transformational approach to isometries and similarities; studies of Euclidean and non-Euclidean geometries. Prerequisite: MTH 150 or consent of instructor. FA (Odd)

MTH 325 Theory and Applications of Probability (3 credits)
Introduces the mathematical treatment of random phenomena occurring in the natural, physical, and social sciences. Topics include combinatorial analysis, binomial distribution, Poisson and normal approximation, random variables and probability distributions, generating functions, Markov chains applications. Prerequisites: MTH 115 or MTH 125 and MTH 150. SP (odd)

MTH 350 Methods of Teaching Mathematics in the Early Childhood and Elementary School (3 credits)
Covers methods for teaching the real number system, probability, statistics, geometry, measurement and algebra. The study and implementation of various models of teaching, including differentiated instruction and technology integration are included. Education certification majors only. Prerequisite: MTH 102 or (MTH 104 and MTH 106). FA, SP

MTH 360 Teaching Mathematics in Middle/Secondary Schools (3 credits)
Study of models of teaching mathematics, diagnostic mathematics, and remedial methods at the middle school or secondary level. Education certification majors only. Prerequisite: Junior or senior status. (Background check required) Offered as needed.

MTH 385 Principles of Cryptography (3 credits)
Introduces the fundamentals of cryptography including the concept of obscuring functions, cryptographic techniques, types of ciphers, proper use of ciphers, ethical uses of cryptography and decryption practices. Topics also include randomness, polymorphism and current trends in cryptography. Prerequisites: CIS 225 (only required for cyber security majors) and MTH 120. FA (Even).

MTH 430 Algebraic Structures (3 credits)
Covers algebraic structures including Boolean algebra, groups, rings, integral domains and fields and their applications which may include: cryptography, coding theory, color patterns, and switching circuits. Prerequisites: MTH 120 and MTH 150. SP (Even)

MTH 480 Research in Mathematics (1-4 credits)
Provides an opportunity for a student to conduct research on a topic of interest in mathematics. Research will be conducted in a non-classroom, individualized environment utilizing the skills and knowledge obtained in applied mathematics courses. Prerequisite: (junior/senior status) and consent of department chair and instructor.
MTH 484 Internship in Applied Mathematics (1-4 credits)
Provides a supervised, off-campus, field-based experience, in applied mathematics, at an approved site specifically related to the career goals of the student. The purpose of the course is to integrate and apply academic knowledge and skills to the professional environment. Credits are determined by the number of hours that a student works at the internship site. Offered on P/F basis. Prerequisites: At least two 300-level mathematics courses.

MTH 490 Independent Study (1-4 credits)
Study in a specialized area, to be arranged according to student need and interest. Prerequisite: Junior or senior status.

MTH 494 Advanced Topics in Mathematics (1-4 credits)
Course generated by the department to supplement regular course listings. Addresses topics in mathematics. Prerequisite: Junior or senior status, or consent of instructor. Offered as needed.

MTH 498 Senior Portfolio (1 credit)
Provides students with the opportunity to create and submit their final portfolio, which is required for graduation. Some of the items in the portfolio are: (1) a self-assessment in relation to how well the student outcomes for program were attained, (2) statements about the professional, ethical, legal, social and security issues and responsibilities associated with the chosen field of study, (3) statements about plans for future professional growth and (4) a professional resume. Prerequisites: Senior status and major approval. FA SP

MTH 499 Senior Synthesis (3 credits)
Allows the student to explore an area in her/his major that either (1) was not covered in the major curriculum or (2) can and will be explored in more depth than in previous coursework. Prerequisites: Senior Status and major approval. Prerequisite: Senior status and major approval. FA SP

RMD 500 Statistical Methods for Research (3 credits)
Exposure to a wide variety of descriptive and inferential statistics. Topics presented will include measure of central tendency and dispersion, t-tests, ANOVA, correlation and regression, non-parametric methods. Experimental design techniques such as blocking will be discussed. Reading and interpreting journal articles that use some of the methods from the course will be included. Use of a statistical software package is integrated into the course. Prerequisite: Competency in algebra. Some knowledge of basic statistical methods is helpful but not required. SP
Interdisciplinary Studies Program

**MAJOR:**
University Major (BA or BS)

**MINORS:**
American Culture Studies
University Minor
Women and Gender Studies

Some degree programs or subject areas/topics may be more adequately studied through two or more disciplines. In this case two or more departments and/or disciplines may collaborate to offer a program or to support a program designed primarily by the student (the university major) through interdisciplinary coursework.

The interdisciplinary studies program offers the university major.

Minors are available in American culture studies, women’s and gender studies, and university minor.

Specific interdisciplinary (INT) courses are offered on a regular basis, while others occur as a need arises (see each semester course schedule).

**UNIVERSITY MAJOR**
Students with well-defined goals and interests which cut across several disciplines are encouraged to consider a university major. This major allows students to individualize a program of study that provides an exploration of diverse fields of study, the challenge of independent work, and possible off-campus experiences. The major may lead to a bachelor of arts (BA) degree or a bachelor of science (BS) degree.

**Baccalaureate Degree and Residency Requirements**
All requirements for an undergraduate degree are listed under academic policies and regulations in the undergraduate introductory section in this catalog. These requirements include a graduation requirement of at least one course in religion or theology.

**General Education Requirements**
The 42 credit hours of general education requirements (GER) are presented in the undergraduate academic information section in this catalog. A course that meets a general education requirement may also meet a course requirement for the major or a course requirement in another discipline.

**Requirements for the University Major**
A university major must have a clearly defined unifying principle. This principle must be either a special career goal (e.g., consumer affairs) not provided in an existing major or a special interest that crosses disciplinary lines (e.g., American studies).

The student pursuing a university major must complete no fewer than 60 credit hours and no more than 80 credit hours in the chosen disciplines. A minimum of 50 percent of the credit hours in the university major must be taken at Fontbonne. A minimum of 24 credit hours must be completed at the upper division level and must represent more than one discipline.

At the time of the submission of a proposal for a university major, the student must have a Fontbonne minimum cumulative grade point (GPA) average of 2.5 and must maintain this GPA through degree completion.

**Procedures for Applying for a University Major**
A student interested in pursuing a university major must:
1. Present a proposal of study to the director of interdisciplinary initiatives who, after review and discussion with the student, will submit the proposal to the chair of the undergraduate academic committee. The
proposal must include the name of the major, goals and objectives, specific courses (those completed and those to be completed) for the major, a timeline for completion, and a recommendation for a primary and a secondary advisor. One advisor must represent one of the disciplines included in the university major. The chair of the department of interdisciplinary studies, if not identified as the primary advisor, will serve as one of these advisors.

2. Submit the proposal of study prior to the completion of 64 credit hours (this total may represent Fontbonne coursework, transfer coursework, or a combination of both).

3. Receive approval from the undergraduate academic committee for the university major and for the primary and secondary advisors for the major.

4. File the approved program of study with the primary and secondary advisors and with the registrar’s office.

The student will be awarded a degree upon the successful completion of the university major and all degree and graduation requirements.

MINORS
MINOR IN AMERICAN CULTURE STUDIES

The American culture studies minor is an interdisciplinary program that allows students to build on their professional interests through a broad approach to the study of American culture at home and abroad. The program combines courses in art, communication, English, government, history, and sociology in addition to core courses in American culture studies.

The minor requires completion of 18 hours of coursework, including ACS 100, 200, and 300 as well as nine elective hours from the list of electives in other departments.

Core courses:
ACS 100 Introduction to American Culture Studies (3)
ACS 200 America Abroad (3)
ACS 300 Topics in American Culture Studies (3)

The elective courses, drawn from offerings in other departments, are listed below. Students must choose one course from each of the following clusters.

Cluster 1:
ART 207 High Art, Propaganda, and Kitsch (3)
ART 313 The American Photograph (3 credits)
MUS 106 American Popular Music (3 credits)
SOC 225 Contemporary Social Theory (3 credits)
SOC 235 Social Stratification (3 credits)
SOC 245 Social Theory (3 credits)
SOC 265 Diversity and Social Justice (3 credits)
WGS 101 Introduction to Women’s Studies (3)
WGS 220 Masculinities (3 credits)

Cluster 2:
COM 210 Rhetorical Criticism (3 credits)
COM 380 Persuasion (3 credits)
ENG 260 American Literary Tradition: to Whitman (3 credits)
ENG 261 American Literary Tradition: since Whitman (3 credits)
ENG 337 American Literary Renaissance (3 credits)
ENG 355 African-American Literature (3 credits)
ENG 365 Development of the American Novel (3)

Cluster 3:
HST 105 Introduction to American History I: Discovery through Civil War (3 credits)
HST 106 Introduction to American History II: Civil War to the Present (3 credits)
HST 310 African-American History (3 credits)
HST 340 American Social History (3 credits)
SSC 201 American Economy (3 credits)
GOV 230 American National Government (3 credits)

In addition, the chair of the department of interdisciplinary studies may approve Special Topics or Dedicated Semester courses to count toward this minor program on a one-time basis. See the chair of the department of interdisciplinary studies for further information.

MINOR IN WOMEN’S AND GENDER STUDIES

The minor program in women’s and gender studies allows students to explore the contributions of women in the culturally-specific, historical, and contemporary social mechanisms through which gender is constructed, limited, responded to and deployed.

The minor in women’s and gender studies requires the completion of 21 credit hours of coursework, including the following:
WGS 101 Introduction to Women’s Studies (3)
WGS 220 Masculinities (3 credits)
WGS 470 Gender Theory (3 credits)

Students must choose one course (3 credits) from one of the following:
COM 230 Gender Communication (3 credits)
PSY 275 Psychology of Women (3 credits)
SOC 320 Sociology of Sex and Gender (3 credits)

Students also choose three courses (9 credits) of elective credits from the following courses:
COM 230 Gender Communication (3 credits)
ENG 220 Introduction to Women’s Literature (3)
FAS 105 Personal, Professional, and Cultural Dress (3 credits)
FCS 337 Family Relations (3 credits)
FCS 440/HST 440 History of Women in the United States (3 credits)
PER 314 Multicultural Experiences in Performance (3 credits)
PER 455 Sexual Politics in Drama (3 credits)
PSY 275 Psychology of Women (3 credits)
REL 240 Women and Religion (3 credits)
SOC 320 Sociology of Sex and Gender (3 credits)

In addition, the director of interdisciplinary initiatives may approve Special Topics or Dedicated Semester courses to count toward this minor program on a one-time basis. See the chair of the department of interdisciplinary studies for further information.

MINOR IN UNIVERSITY MINOR

Students with well-defined goals and interests which are not met within the current offerings of minors are encouraged to consider a university minor. As with the university major, the university minor must have a clearly defined unifying principle. This principle must be either a special focus (e.g., consumer affairs) not provided in an existing major or a special interest that crosses disciplinary lines (e.g., American studies).

A student pursuing a university minor must complete 18 credit hours in the chosen discipline. A minimum of 50 percent of the credit hours in the university minor must be taken at Fontbonne. A minimum of 9 credit hours must be completed at the upper division level and must represent more than one discipline.

A student interested in pursuing a university minor must:
Construct a proposal of study with the assistance and approval of their major advisor, and present the proposal of study to the director of interdisciplinary initiatives for review. After discussion with the student, the director will submit the proposal to the chair of the undergraduate academic committee. The proposal must include the name of the minor, goals and objectives, specific courses (those completed and those to be completed) for the minor, a timeline for completion.

1. Submit the proposal of study prior to the completion of 94 credit hours (this total may represent Fontbonne coursework, transfer coursework, or a combination of both).
2. Receive approval from the undergraduate academic committee for the university minor.
3. File the approved program of study with the major advisor and with the registrar’s office.

The student will be awarded a degree upon the successful completion of the university minor and all degree and graduation requirements.

COURSES

AMERICAN CULTURE STUDIES COURSES

ACS 100 Introduction to American Culture Studies (3 credits)
A general introduction to American studies and its problems and contexts. Students will consider what and who defines America (and how) through interdisciplinary readings and discussions. Students will develop critical thinking and analytic skills to help them develop skills for interpreting American culture. Fulfills a specialized valuing general education requirement. FA, SP

ACS 200 America Abroad (3 credits)
An examination of the meaning of “America” outside its own borders, with emphasis on the last sixty years with an emphasis on the intersection of popular culture and foreign policy, as well as on globalization. Instructors will draw from film, television, politics, journalism, history, literature, music, art, and other media. SP

ACS 300 Topics in American Culture Studies (3 credits)
Various topics in American studies will be offered on a rotating basis. Sample topics include The Holocaust in American Life, The American Family, The American City Since 1945, and The American Photograph. FA, SP

INTERDISCIPLINARY STUDIES COURSES

INT 105 Mission Core I: Culture and the Common Good (3 credits)
This course will explore the meaning of the term “the common good” in the context of different traditions. The course will draw examples from a wide variety of disciplines and subject areas. Students are challenged to explore their roles as individuals, as members of multiple cultures or faiths, and as global citizens in promoting the "common good." The course also includes a component designed to assist first-year students in effect learning and study strategies. FA

INT 106 Strategies for Self-Directed Learning (1 credit)
This course is designed to aid students in being successful self-directed learners at a collegiate level. The course content is focused on developing new ways of analyzing, integrating, and applying learning strategies to various learning situations that encourage academic success. FA SP

INT 207 Leadership through Social Change (3 credits)
This course is designed to provide insight, participation, and discussion pertaining to leadership. The course will also provide opportunities for students to identify their own diverse leadership abilities and style as well as to continuously reflect on their own leadership development.
Instruction will utilize both curricular and co-curricular approaches in the classroom. SP

**INT 293 Special Topics (1-3 credits)**
A first-year, second-year level course offered to supplement regular course offerings. Offered on a periodic or one-time-only basis.

**LIBRARY COURSES**
**LIB 199 Information Literacy in Higher Education (1 credit)**
This course is designed to improve the skills and knowledge necessary to conduct library research in an academic setting. Areas of focus include utilizing various types of information sources and formats, developing effective search strategies, critically evaluating information, differentiating scholarly from popular sources, and using information ethically and responsibly. FA, SP, SU

**WOMEN’S AND GENDER STUDIES COURSES**
**WGS 101 Introduction to Women’s Studies (3 credits)**
This course provides an introduction to the interdisciplinary field of women’s studies. Readings in feminist theory and research, autobiography, and the history of women’s rights activism will provide a framework for an investigation of major themes in women’s lives. Using contemporary cultures of the United States as our primary field of study, we will also explore dominant ideas about gender, one of the primary terms through which human beings articulate identity, define social roles, and assign status. We will consider as well how notions of gender intersect with other components of experiences such as those related to nationality, culture, ethnicity, race, class, age, religion, and sexuality. Fulfills specialized valuing general education requirement. FA

**WGS 220 Masculinities (3 credits)**
The course introduces students to main categories, topics, and research of masculinity studies. Through theoretical readings and discussions of popular culture, we will focus on the central debates around men and masculinities. We will examine the following questions:
- How is masculinity constructed and maintained in society?
- How do we learn to be men and play masculinity in everyday life?
- How do race, class, ethnicity, and sexuality affect our masculinities?
- What is the relationship between masculinity and sexed bodies?
Analyzing male sexuality, intimacy, violence, homophobia, and gender equality, we will pay considerable attention to different forms of masculinity and masculinity politics in the contemporary world. SP

**WGS 470 Gender Theory (3 credits)**
This course builds upon the understanding of gender studies introduced in WGS 101. Odd springs. SP
Bonnie and L.B. Eckelkamp College of Global Business and Professional Studies

DEPARTMENT OF BUSINESS ADMINISTRATION
DEPARTMENT OF FASHION MERCHANDISING
DEPARTMENT OF SOCIAL WORK

Dr. Jay Johnson, Dean

MISSION
The mission of the Eckelkamp College of Global Business and Professional Studies at Fontbonne University is to provide academically sound business programs that are responsive to current and future business needs. The College strives to create a supportive environment that provides individualized attention to a diverse student population.

Consistent with the life-long learning goals of Fontbonne University, the programs are designed to ensure each student graduates with the ability to think critically, act ethically, and assume responsibility as citizens and leaders.

The College also works to provide students with facts, theories, and practical skills to hold responsible managerial and administrative positions in general business, industry, and nonprofit organizations.
Department of Business Administration

MAJORS:
Accounting (BS)
Business Administration (BS)
Management and Leadership (BS)
Marketing (BS)
Sports Management (BS)
General Studies: Business (BA)

MINORS:
Business Administration
Marketing
Social Entrepreneurship
Sports Management

CERTIFICATES:
Social Entrepreneurship

Undergraduate majors are offered in Accounting, Business Administration, Management and Leadership, Marketing and Sports Management leading to a Bachelor of Science degree; or General Studies with Emphasis in Business leading to a Bachelor of Arts degree. Those students who are seeking intensive exposure to Accounting, Finance, Management, or Social Entrepreneurship can obtain a concentration in these areas. Additionally, there is an offering of a Certificate in Social Entrepreneurship.

The programs contain courses that are offered in a variety of formats, which may include online, evening, and day courses. Please consult your advisor for information on specific courses and their offerings, and cooperative education opportunities.

Fontbonne University is accredited by the Higher Learning Commission of the North Central Association of Colleges and Schools. The Eckelkamp College of Global Business and Professional Studies has earned accreditation from the Accreditation Council for Business Schools and Programs (ACBSP) for Bachelor of Science in Accounting; Bachelor of Science in Business Administration; Bachelor of Science in Marketing; Bachelor of Science in Sports Management. Our remaining programs are currently accredited by the Higher Learning Commission. For information on the graduate programs in the Eckelkamp College of Global Business and Professional Studies, see the graduate program section in this catalog.

FACULTY
Jay J. Johnson, dean of the Bonnie and L.B. Eckelkamp College of Global Business and Professional Studies; associate professor of business administration
Robert Romano, chair of business administration; assistant professor; director of sports management
Linda Abernathy, Instructor of Accounting
Mark M. Alexander, instructor of management
Jill Bernard, assistant professor of business administration; program director for the Master of Science in supply chain management
Linda D. Magrath, professor of business administration; program director for accounting
Kristen Schroath, assistant professor of business
MAJOR IN ACCOUNTING

Baccalaureate Degree and Residency Requirements
All requirements for an undergraduate degree are listed in the undergraduate academic policies and regulations section in this catalog. These requirements include general education requirements and a graduation requirement of at least one course in religion or theology.

Major Approval
Major approval is required during the second semester of the sophomore year, or after the completion of 45 credit hours at Fontbonne. For transfer students, major approval is required after completing the equivalent of one full semester (a minimum of 12 credits) at Fontbonne.

Students majoring in accounting must have a minimum cumulative grade point average of 2.5 in all courses required for the major at the time of application for major approval and through degree completion (graduation).

General Education Requirements
The 42 credit hours of general education requirements are presented in the undergraduate academic information section in this catalog. A course that meets a general education requirement may also meet a course requirement for the major or a course requirement in another discipline.

Courses Required in the Accounting Major (60 credits):

**Business Core:**
- BSA 100 Business Components Assessment (0 credits)
- ACT 210 Financial Accounting (3 credits)
- ACT 220 Managerial Accounting (3 credits)
- ECN 210 Principles of Macro Economics (3 credits)
- ECN 220 Principles of Micro Economics (3 credits)
- MKT 210 Marketing Principles (3 credits)
- MGT 210 Management Principles (3 credits)
- BSA 210 Business Law (3 credits)
- BSA 310 International Business (3 credits)
- FIN 310 Managerial Finance (3 credits)
- MGT 330 Management and Business Ethics (3 credits)
- BSA 410 Quantitative Analysis in Business (3 credits)

**Accounting Core:**
- ACT 310 Intermediate Accounting I (3 credits)

**Business Core:**
- BSA 100 Business Components Assessment (0 credits)
- ACT 210 Financial Accounting (3 credits)
- ACT 220 Managerial Accounting (3 credits)
- ECN 210 Principles of Macro Economics (3 credits)
- ECN 220 Principles of Micro Economics (3 credits)
- MKT 210 Marketing Principles (3 credits)

**Accounting Core:**
- ACT 310 Intermediate Accounting I (3 credits)

**Accounting Core:**
- ACT 320 Intermediate Accounting II (3 credits)
- ACT 330 Advanced Accounting (3 credits)
- ACT 340 Advanced Topics in Management Cost Accounting (3 credits)
- ACT 350 Federal Income Taxation for Individuals (3 credits)
- ACT 410 Auditing (3 credits)
- ACT 420 Accounting Information Systems (3 credits)
- ACT 430 Advanced Financial Management (3 credits)
- ACT 460 Accounting Capstone (3 credits)

Courses required in other disciplines (10 credits):
- ENG 201 Business Writing (3 credits)
- MTH 105 College Algebra (4 credits)
- MTH 115 Introduction to Statistics (3 credits)

MAJOR IN BUSINESS ADMINISTRATION

Baccalaureate Degree and Residency Requirements
All requirements for an undergraduate degree are listed in the undergraduate academic policies and regulations section in this catalog. These requirements include general education requirements and a graduation requirement of at least one course in religion or theology.

Major Approval
Major approval is required during the second semester of the sophomore year, or after the completion of 45 credit hours at Fontbonne. For transfer students, major approval is required after completing the equivalent of one full semester (a minimum of 12 credits) at Fontbonne.

Students majoring in business administration must have a minimum cumulative grade point average of 2.5 in all courses required for the major (all business courses) at the time of application for major approval and through degree completion (graduation). A minimum cumulative grade point average of 2.5 is required to declare a concentration.

General Education Requirements
The 42 credit hours of general education requirements are presented in the undergraduate academic information section...
in this catalog. A course that meets a general education requirement may also meet a course requirement for the major or a course requirement in another discipline.

The following specific general education courses must be chosen to meet the requirements for this major:

**Courses Required in the Business Administration Major (48 credits):**
- BSA 100 Business Components Assessment (0 credits)
- ACT 210 Financial Accounting (3 credits)
- ACT 220 Managerial Accounting (3 credits)
- ECN 210 Principles of Macro Economics (3 credits)
- ECN 220 Principles of Micro Economics (3 credits)
- MKT 210 Marketing Principles (3 credits)
- MGT 210 Management Principles (3 credits)
- BSA 210 Business Law (3 credits)
- BSA 310 International Business (3 credits)
- FIN 310 Managerial Finance (3 credits)
- MGT 320 Organizational Behavior (3 credits)
- MGT 330 Management and Business Ethics (3 credits)
- MKT 350 Production/Operations Management (3 credits)
- MGT 360 Entrepreneurship (3 credits)
- BSA 410 Quantitative Analysis in Business (3 credits)
- BSA 430/435 Internship or Practicum in Business Administration (3 credits) [with internship advisor approval]
- MGT 460 Strategic Management (3 credits)

**Courses required in other disciplines (10 credits):**
- ENG 201 Business Writing (3 credits)
- MTH 115 Introduction to Statistics (3 credits)
- MTH 105 College Algebra (4 credits)

**Concentrations for the Business Administration Major**
The departmental course requirements for a concentration must be completed at Fontbonne University. If a student, prior to transferring, has already completed a course that is required in the concentration by Fontbonne, to earn the concentration the student must still complete a minimum of 18 credit hours of upper-division coursework in that concentration at Fontbonne. A maximum of two concentrations are allowed and a minimum cumulative grade point average of 2.5 is required to declare a concentration. Concentrations for Business Administration major include Accounting, Finance, Management, and Social Entrepreneurship. See detailed information regarding concentrations in the Concentration section.

**MAJOR IN MANAGEMENT AND LEADERSHIP**

**Baccalaureate Degree and Residency Requirements**
All requirements for an undergraduate degree are listed in the undergraduate academic information and academic policies and regulations sections in this catalog. These requirements include general education requirements and a graduation requirement of at least one course in religion or theology.

**Major Approval**
Major approval is required during the second semester of the sophomore year, or after the completion of 45 credit hours at Fontbonne. For transfer students, major approval is required after completing the equivalent of one full semester (*a minimum of 12 credits*) at Fontbonne.

Students majoring in management must have a minimum cumulative grade point average of 2.5 in all courses required for the major (*all business courses*) at the time of application for major approval and through degree completion (*graduation*).

Students are encouraged to select a minor to complement their major area of study. Students wishing to pursue minors in other departments should consult their advisor.

**General Education Requirements**
The 42 credit hours of general education requirements are presented in the undergraduate academic information section in this catalog. A course that meets a general education requirement may also meet a course requirement for the major or a course requirement in another discipline.

The following specific general education courses must be chosen to meet the requirements for this major:
- PSY 100 Introduction to Psychology (3 credits)

**Courses required in the Management and Leadership Major (60 credits):**

**Business Core:**
- BSA 100 Business Components Assessment (0 credits)
- ACT 210 Financial Accounting (3 credits)
- ACT 220 Managerial Accounting (3 credits)
- ECN 210 Principles of Macro Economics (3 credits)
- ECN 220 Principles of Micro Economics (3 credits)
- MKT 210 Marketing Principles (3 credits)
- MGT 210 Management Principles (3 credits)
- BSA 210 Business Law (3 credits)
- BSA 310 International Business (3 credits)
- FIN 310 Managerial Finance (3 credits)
MGT 320 Organizational Behavior (3 credits)
MGT 330 Management and Business Ethics (3 credits)
MGT 360 Entrepreneurship (3 credits)

Management and Leadership Core:
HRM 310 Human Resource Management (3 credits)
MGT 310 Public Admin. & Nonprofit Management (3 credits)
MGT 350 Production/Operations Management (3 credits)
BSA 410 Quantitative Analysis in Business (3 credits)
BSA 430/435 Internship or Practicum in Business Administration (3 credits) (prior approval)
MGT 430 Case Studies/Readings in Management (3 credits)
MGT 440 Leadership: Managing in a Changing Environment (3 credits)
MGT 460 Strategic Management (3 credits)

Courses required in other disciplines (19 credits):
CIS 110 Microcomputer Applications: Spreadsheets (3 credits)
COM 102 Public Speaking (3 credits)
ENG 201 Business Writing (3 credits)
MTH 105 College Algebra (4 credits)
MTH 115 Introduction to Statistics (3 credits)
PSY 327 Industrial/Organizational Psychology (3 credits)

MAJOR IN MARKETING
Baccalaureate Degree and Residency Requirements
All requirements for an undergraduate degree are listed in the undergraduate academic information and academic policies and regulations sections in this catalog. These requirements include general education requirements and a graduation requirement of at least one course in religion or theology.

Major Approval
Major approval is required during the second semester of the sophomore year, or after the completion of 45 credit hours at Fontbonne. For transfer students, major approval is required after completing the equivalent of one full semester (a minimum of 12 credits) at Fontbonne.

Students majoring in marketing must have a minimum cumulative grade point average of 2.5 in all courses required for the major (all business courses) at the time of application for major approval and through degree completion (graduation).

Students are encouraged to select a minor to complement their major area of study. Students wishing to pursue minors in other departments should consult their advisor.

General Education Requirements
The 42 credit hours of general education requirements are presented in the undergraduate academic information section in this catalog. A course that meets a general education requirement may also meet a course requirement in the major or a course requirement in another discipline.

The following specific general education courses must be chosen to meet the requirements for this major:
PSY 100 Introduction to Psychology (3 credits) OR SOC 100 Survey of Sociology (3 credits)

Courses Required in the Marketing Major (63 credits):

Business Core:
BSA 100 Business Components Assessment (0 credits)
ACT 210 Financial Accounting (3 credits)
ACT 220 Managerial Accounting (3 credits)
ECN 210 Principles of Macro Economics OR ECN 220 Principles of Micro Economics (3 credits)
MKT 210 Marketing Principles (3 credits)
MKT 210 Management Principles (3 credits)
BSA 210 Business Law (3 credits)
BSA 310 International Business (3 credits)
FIN 310 Managerial Finance (3 credits)
MKT 330 Management and Business Ethics (3 credits)
MGT 350 Production/Operations Management (3 credits)

Marketing Core:
MKT 320 Advertising and Promotion Management (3 credits)
MKT 340 Consumer Behavior (3 credits)
MKT 410 Marketing Research (3 credits)
MKT 420 International Marketing (3 credits)
MKT 460 Marketing Management (3 credits)

Choose four of the following courses (12 credits):
ART 218 Vector and Bitmap Imaging (3 credits)
ART 302 Web Design II (3 credits)
BSA 435 Internship in Business Administration (3 credits)
COM 260 Media, Technology, and Culture (3 credits)
COM 295 Persuasion (3 credits) OR COM 430 Argumentation, Advocacy, and Debate (3 credits)
COM 340 Principles and Ethics of Strategic Communication (3 credits)
MKT 325 Social Media Management (3 credits)
MKT 330 Principles of Selling (3 credits)
MKT 430 Case Studies/Readings in Marketing (3 credits)
SPT 260 Sports Marketing (3 credits)
TRN 210 Introduction to Transportation (3 credits)
TRN 310 Transportation Management (3 credits)
Courses required in other disciplines (6 credits):
ENG 201 Business Writing (3 credits)
MTH 115 Introduction to Statistics (3 credits)

MAJOR IN SPORTS MANAGEMENT
Baccalaureate Degree and Residency Requirements
All requirements for an undergraduate degree are listed in the undergraduate academic information and academic policies and regulations sections in this catalog. These requirements include general education requirements and a graduation requirement of at least one course in religion or theology.

Major Approval
Major approval is required during the second semester of the sophomore year, or after the completion of 45 credit hours at Fontbonne. For transfer students, major approval is required after completing the equivalent of one full semester (a minimum of 12 credits) at Fontbonne.
Students majoring in sports management must have a minimum cumulative grade point average of 2.5 in all courses required for the major (all business and sports management courses) at the time of application for major approval and through degree completion (graduation).

Students are encouraged to select a minor to complement their major area of study. Students wishing to pursue minors in other departments should consult their advisor.

General Education Requirements
The 42 credit hours of general education requirements are presented in the undergraduate academic information section in this catalog. A course that meets a general education requirement may also meet a course requirement in the major or a course requirement in another discipline.

The following specific general education courses must be chosen to meet the requirements for this major:

PSY 100 Introduction to Psychology (3 credits)
SOC 100 Survey of Sociology (3 credits)

Courses Required in the Sports Management Major (49 credits):

Business Core:
BSA 100 Business Components Assessment (0 credits)
ACT 210 Financial Accounting (3 credits)
ECN 210 Principles of Macro Economics OR ECN 220 Principles of Micro Economics (3 credits)
MKT 210 Marketing Principles (3 credits)
BSA 210 Business Law (3 credits)

BSA 310 International Business (3 credits)
MGT 220 Negotiation Skills in Business (1 credit)
MGT 330 Management and Business Ethics (3 credits)

Sports Management Core:
SPT 101 Introduction to Sports Management (3 credits)
SPT 205 Sport Accounting and Finance (3 credits)
SPT 240 Sports Facility and Event Management (3 credits)
SPT 260 Sports Marketing (3 credits)
SPT 300 Legal Issues in Sports Management (3 credits)
SPT 310 Social Aspects of Sports (3 credits)
SPT 320 Sports Psychology (3 credits)
SPT 330 Leadership and Governance in Sports (3 credits)
SPT 460 Strategic Management in the Sports Industry (3 credits)
SPT 495 Internship in Sports Management (3 credits) [with internship advisor approval]

Courses required in other disciplines (15 credits):
CIS 100 Computer Tech, Issues & Applications (3 credits)
COM 102 Public Speaking (3 credits)
ENG 201 Business Writing (3 credits)
FCS/SPT 213 Nutrition for Fitness and Physical Performance (3 credits)
MTH 115 Introduction to Statistics (3 credits)

Concentrations for the Sports Management Major
Accounting, Finance, and Management concentrations are also available with the Sports Management major. See detailed information regarding concentrations in the concentration section.

GENERAL STUDIES: BUSINESS
The general studies with (disciplinary) emphasis major offers students a path to graduation that combines generalized study with disciplinary focus, leading to a Bachelor of Arts degree.

Major requirements include:
• Residency, Major, General Education, and Graduation Requirements as described in the Fontbonne University Catalog.
• A minimum GPA of 2.0 in the major is required for graduation.

Courses Required in the General Studies with Emphasis in Business (21 credits):
MTH 115 Introduction to Statistics (3 credits)
ACT 210 Financial Accounting (3 credits)
ECN 210 Principles of Macro Economics (3 credits)
MKT 210 Marketing Principles (3 credits)
MGT 210 Management Principles (3 credits)
FIN 310 Managerial Finance (3 credits)
MGT 460 Strategic Management (3 credits)

MINORS
A student must successfully complete, at Fontbonne, a minimum of 50% of the credit hours required for the minor.

Minors are available in other departments. Students wishing to pursue minors in other departments should consult their advisor.

MINOR IN BUSINESS ADMINISTRATION
(18 credits)
MTH 115 Introduction to Statistics (3 credits)
ACT 210 Financial Accounting (3 credits)
ECN 210 Principles of Macroeconomics (3 credits)
MKT 210 Marketing Principles (3 credits)
MGT 210 Management Principles (3 credits)
FIN 310 Managerial Finance (3 credits)

MINOR IN MARKETING
(18 credits)
MKT 210 Marketing Principles (3 credits)
MKT 340 Consumer Behavior (3 credits)
MKT 410 Marketing Research (3 credits)
Marketing Electives - choose three (9 credits)
COM 260 Media, Technology, and Culture (3 credits)
COM 340 Principles and Ethics of Strategic Communication (3 credits)
MKT 320 Advertising and Promotion Management (3 credits)
MKT 325 Social Media Management (3 credits)
MKT 330 Principles of Selling (3 credits)
MKT 420 International Marketing (3 credits)
MKT 430 Case Studies/Readings in Marketing (3 credits)
SPT 260 Sports Marketing (3 credits)

MINOR IN SPORTS MANAGEMENT
Course Required in the Minor (9 credits):
SPT 101 Introduction to Sports Management (3 credits)
SPT 260 Sports Marketing (3 credits)
SPT 300 Legal Issues in Sports (3 credits)
Choose two of the following (6 credits):
SPT 240 Sport Facility and Event Management
SPT 310 Social Aspects of Sports (3 credits)
SPT 320 Sports Psychology (3 credits)
SPT 330 Leadership and Governance in Sports (3 credits)

MINOR IN SOCIAL ENTREPRENEURSHIP
Courses Required in the Minor (18 credits)
SOC 203 Foundations of Social Change (3 credits)
INT 207 The Power of Leadership (3 credits)
MGT 360 Entrepreneurship (3 credits)
COM 430 Argumentation and Debate (3 credits)
SWK 300 Social Issues and Social Welfare Policy (3 credits)
MGT 450 Special Project for Social Entrepreneurship (3 credits)

MINOR IN TRANSPORTATION
Courses Required in the Minor (18 credits)
TRN 210 Introduction to Transportation (3 credits)
TRN 310 Transportation Management (3 credits)
TRN 320 Business Logistics (3 credits)
TRN 330 Transportation Economics & Policy (3 credits)
TRN 350 International Transportation & Logistics (3 cr.)
TRN 460 Seminar in Transportation (3 credits)

CERTIFICATES
The Eckelkamp College of Global Business and Professional Studies offers an undergraduate certificate in social entrepreneurship. The certificate allows students to obtain specialized knowledge in a specific area.

SOCIAL ENTREPRENEURSHIP
(18 CREDITS)
SOC 203 Foundations of Social Change (3 credits)
INT 207 The Power of Leadership (3 credits)
MGT 360 Entrepreneurship (3 credits)
COM 430 Argumentation and Debate (3 credits)
SWK 300 Social Issues and Social Welfare Policy (3 credits)
MGT 450 Special Project for Social Entrepreneurship (3 credits)

CONCENTRATIONS
The departmental course requirements for a concentration must be completed at Fontbonne University. If a student, prior to transferring, has already completed a course that is required in the concentration by Fontbonne, to earn the concentration the student must still complete a minimum of 18 credit hours of upper-division coursework in that concentration at Fontbonne. A maximum of two concentrations are allowed and a minimum cumulative grade point average of 2.5 is required to declare a concentration.

ACCOUNTING (18 CREDITS)
The accounting concentration prepares students for careers in public and private accounting.

ACT 310 Intermediate Accounting I (3 credits)
ACT 320 Intermediate Accounting II (3 credits)
ACT 340 Advanced Topics in Management Cost Accounting (3 credits)
ACT 350 Federal Income Taxation for Individuals (3 cr)
ACT 410 Auditing (3 credits)
ACT 460 Accounting Capstone (3 credits)

If a student desires to take the Missouri CPA exam he/she must take a total of 33 credit hours of accounting courses. After completing the major in Business Administration and the accounting concentration, the student will need an additional nine credit hours of accounting courses at the undergraduate or graduate level. For detailed information on dual undergraduate/graduate enrollment, please refer to the undergraduate and/or the graduate academic policies and regulations sections in this catalog.

FINANCE (18 CREDITS)
The finance concentration prepares students for careers in finance, banking, insurance, and real estate.

FIN 320 Money & Banking (3 credits)
FIN 325 Credit Management (3 credits)
FIN 330 Investments (3 credits)
FIN 335 Commercial Banking (3 credits)
FIN 430 Case Studies in Finance (3 credits)
ACT 430 Advanced Financial Management (3 credits)

MANAGEMENT (18 CREDITS)
The concentration management gives students a general understanding of the behavioral aspects of organizations. It is ideal for students who are either undecided regarding the other business concentrations or who wish a non-quantitative approach to business administration.

HRM 310 Human Resource Management (3 credits)
MGT 310 Public Administration and Nonprofit Management (3 credits)
MGT 360 Entrepreneurship (3 credits)
MGT 370 International Management (3 credits)
MGT 430 Case Studies/Readings in Management (3 credits)
MGT 440 Leadership: Managing in a Changing Environment (3 credits)

SOCIAL ENTREPRENEURSHIP (18 CREDITS)
The concentration in social entrepreneurship asks students to utilize business concepts to achieve social goals.

SOC 203 Foundations of Social Change (3 credits)
INT 207 The Power of Leadership (3 credits)
MGT 360 Entrepreneurship (3 credits)
COM 430 Argumentation and Debate (3 credits)
SWK 300 Social Issues and Social Welfare Policy (3 credits)
MGT 450 Special Project for Social Entrepreneurship (3 cr.)

COURSES

ACCOUNTING COURSES

ACT 210 Financial Accounting (3 credits)
Acquaints students with the language of communicating financial information of a business enterprise to owners and stakeholders. Material to be covered includes the components of financial statements and the development thereof, accounting principles of service and merchandising concerns, and inventory and depreciation methods. Prerequisite: BSA 210 (may be taken concurrently). FA, SP, SU

ACT 220 Managerial Accounting (3 credits)
Focuses on developing and utilizing accounting information for planning, control, and managerial decision making. Cost classifications, job costing, process costing, activity-based costing, cost-volume profit analysis, budgeting, variable costing, relevant cost, and the contribution approach to decision making will be covered. Prerequisite: ACT 210. FA, SP, SU

ACT 310 Intermediate Accounting I (3 credits)
A study of the body of generally accepted accounting principles specifically concerned with the recognition of matching of revenues and expenses to determine book net income and the related issues of asset measurement, including modifications and refinements used to develop accounting information. Prerequisite: ACT 210. FA

ACT 320 Intermediate Accounting II (3 credits)
A study of generally accepted accounting principles focusing on the problems of balance sheet valuation and the affect upon the income statement and the statement of cash flows. Recent accounting standards affecting judgment and opinion upon financial statements are also considered. Prerequisite: ACT 310. SP

ACT 330 Advanced Accounting (3 credits)
Further study of financial accounting and reporting from ACT 320 Financial Accounting & Reporting II. Contemporary issues involving stock options, pensions, investments, deferred taxes, and international accounting will be addressed. This course also introduces the student to non-profit and governmental accounting. Prerequisite: ACT 320. FA

ACT 340 Advanced Topics in Management Cost Accounting (3 credits)
An intensive study of the unique accounting requirements of manufacturing firms focusing on job, process, activity-based costing, and standard costing method, as well as the implication of direct versus full absorption costing analyses for decision-making purposes. Prerequisite: ACT 220. SP
**ACT 350 Income Taxation for Individuals (3 credits)**
The study of the Internal Revenue Code and concomitant regulations as they relate to the accounting problems affecting individual and corporate taxpayers. Course will deal with both the theoretical and practical (compliance) aspects of tax accounting, including the regular and alternative minimum tax computations. Prerequisite: ACT 210. FA

**ACT 410 Auditing (3 credits)**
A study of the standards and procedures used by independent certified public accountants in verifying business data to render an opinion and report on financial statements. Focus is also on generally accepted auditing standards and the AICPA canon of ethics. Prerequisite: ACT 320. SP

**ACT 420 Accounting Information Systems (3 credits)**
A study of the flow of accounting information systems with other information systems. The course integrates student knowledge of financial accounting and cost accounting with computerized information systems. Special emphasis will be given to the analysis, design, and auditing of computerized accounting information systems. Prerequisite: ACT 320. SP, SU

**ACT 430 Advanced Financial Management (3 credits)**
An advanced topics course that builds upon the principles covered in Managerial Finance. Emphasis is on the decision-making processes followed by corporate financial managers. Topics include the time value of money, capital budgeting, risk evaluation, dividend policy, capital markets, evaluation of investment alternatives and derivative securities. Topics will be examined from both domestic and international perspectives. Prerequisites: ACT 220; FIN 310. SP

**ACT 450 Accounting Special Topics (1-3 credits)**
Course offered to supplement regular course listings. Offered on an as-needed basis.

**ACT 460 Accounting Capstone (3 credits)**
This accounting capstone course sharpens analytical skills while building upon basic finance and Microsoft Excel knowledge, so students leave with the solid finance knowledge that business professionals need for success. Today’s most important corporate finance topics, including financial forecasting, break-even and leverage analysis, the cost of capital, capital budgeting, cash budgeting, equities, and debt will be addressed. Excel tables, pivot tables, and other areas that have become increasingly important to today’s employers will be covered. Prerequisites: ACT 310; ACT 320; FIN 310. SP

**ADVERTISING COURSES**

**ADV 201 Introduction to Advertising (3 credits)**
Introduces students to the advertising industry beginning with the history of advertising and its economic and social functions. Students will learn about message development, strategy, research, media, and ethics through lecture, discussion, social media forums, and experiential projects. Students will complete a paper based on industry research, undertake a group project, and begin developing a portfolio of assignments based on the group project. Offered on an as-needed basis.

**ADV 293 Special Topics (1-3 credits)**
A freshman/sophomore level course offered to supplement regular course offerings. Offered on a periodic or one-time-only basis.

**ADV 220 Advertising Strategies (3 credits)**
Students will study of the techniques and strategies used in developing specific advertising messages and campaigns. Course emphasizes creative strategies, media selection, and the ethics of advertising. Students will craft and evaluate advertising strategies and develop advertising portfolio materials. Prerequisite: ADV 201. Offered on an as-needed basis.

**ADV 230 Advertising Copywriting (3 credits)**
Learn and apply the principles and practices of persuasive writing through a series of advertising projects, to including print and broadcast advertising, brochures, direct mail, and new media advertising. Prerequisites: ENG 101; 102; ADV 201; ADV 220 or permission of instructor. Offered on an as-needed basis.

**ADV 330 Writing for Digital Media (3 credits)**
An applied writing course that covers tactics, message strategy, and frequency of digital media advertising campaigns while emphasizing development of unique, brand-centered tone and voice when writing for digital and social media platforms. Students will write a variety of media platforms including Internet, mobile, email, social media, and multimedia. Prerequisite: MKT 210. Offered on an as-needed basis.

**ADV 440 Brand U (3 credits)**
A wide-ranging course that applies branding techniques to individual career preparation. Students will learn how to manage their digital identities while honing more traditional career prep skills such as resume writing, networking, and portfolio preparation. While this course is designed for Advertising students, students from any major or discipline are welcome; course requirements will be adjusted accordingly. All students will create portfolio pieces or samples to showcase the student’s complete range of skill and experience as part of a digital portfolio designed to highlight relevant skills to prospective employers.
Prerequisites: MKT 210, ADV 201, ADV 230 or permission of the instructor. Offered on an as-needed basis.

**ADV 450 Internship in Advertising (3-6 credits)**
A supervised off-campus internship which provides the student the opportunity to apply and develop advertising skills in a work setting. The course also requires the student to submit a weekly journal, comprehensive synthesis paper, and samples of work. The internship is cooperatively administered by an employer and a faculty member. Prerequisites: ADV 220; ADV 230; Senior Status or permission of instructor. Offered on an as-needed basis.

**ADV 494 Special Topics (1-3 credits)**
A junior/senior level course offered to supplement regular course listings. Offered on a periodic or one-time-only basis.

**ADV 496 Senior Seminar in Advertising (3 credits)**
Semester-long project embracing the complete advertising process, including research, design, creative strategies, message development, and execution. Students will present campaigns orally and in writing. In addition, students will submit a portfolio of work that includes an assignment from each course in the advertising major; portfolios will receive extensive written evaluation and may be reviewed by advertising copywriters and/or graphic designers. Prerequisites: ADV220; ADV 230; Senior Status or permission of the instructor. Offered on an as-needed basis.

**BUSINESS COURSES**

**BSA 100 Business Components Assessment (0 credits)**
This assessment, taken during the student's first term/semester, measures students' knowledge of business common professional components upon entering their program. Graduation requirement. FA, SP, SU

**BSA 210 Business Law (3 credits)**
An introductory course in the study of business law. Topics include the nature of law, the types and function of dispute resolutions, contracts, agency, torts, and business organizations. FA, SP, SU

**BSA 293 Special Topics (1-3 credits)**
Course offered to supplement regular course offerings. Offered on a one-time or periodic basis.

**BSA 301 Cooperative Education (1-6 credits)**
Supervised off-campus work experience for pay and for academic credit. Must be related to the student’s degree program. Cooperatively administered by an employer and the director of cooperative education. P/NP grading option only. Prerequisite: Sophomore/junior/senior status. FA, SP, SU

**BSA 310 International Business (3 credits)**
Topics include importing, exporting, tariffs, the balance of payments, foreign exchange, and the phenomenon of globalization. Prerequisites: ECN 210. FA, SP

**BSA 410 Quantitative Analysis in Business (3 credits)**
Techniques and applications of statistical models applied to business. Focus will include, but not limited to, probability theory, time series, regression, and forecasting. Prerequisites: MTH 115. FA, SP

**BSA 430 Practicum in Business (3-9 credits)**
A supervised experiential-learning course that requires the student to apply the theoretical knowledge obtained in their coursework to an actual work environment. This course will require the student to think critically about the application of business theories to the workplace. The student will be required to identify the specific business theories being utilized in their work setting and analyze their application, including their appropriateness and effectiveness. This course will include a comprehensive paper and presentation. This experiential-learning course will be cooperatively administered by an employer-supervisor and a member of the faculty. The student must clock a minimum of 150 hours and a maximum of 320 hours in the actual work environment and during the semester in which he/she is registered for this course. Prerequisite: Junior or senior status. FA, SP, SU

**BSA 435 Internship in Business Administration (3-9 credits)**
A supervised experiential-learning course that requires the student to apply the theoretical and practical knowledge obtained in their coursework to an actual work environment. This course will require the student to think critically about the application of business theories and practices to the workplace. The student will be required to identify the specific business theories and practices being utilized in their setting and analyze their application, including their appropriateness and effectiveness. This course will include, among other assignments, a comprehensive term paper and a formal presentation. The employer-supervisor will be responsible for submitting a formal evaluation of the student’s performance at the completion of the semester. The student must clock a minimum of 150 hours and a maximum of 320 hours in the actual work environment and during the semester in which he/she is registered for this course. Prerequisite: Junior or senior status. FA, SP, SU

**BSA 490 Independent Study (1-4 credits)**
Study in a specialized area, to be arranged according to student need and interest. Prerequisites: Junior or senior status; approval of instructor and department chairperson. Offered on an as-needed basis.
BSA 494 Special Topics (1-6 credits)
Course offered to supplement regular course listings. Offered on an as-needed basis.

ECONOMICS COURSES
ECN 210 Principles of Macro Economics (3 credits)
Macroeconomics is concerned with keeping economic fluctuations within reasonable bounds. Topics include the measurement of the national income, inflation, unemployment, economic growth and monetary and fiscal policies and international outcomes. Prerequisite: BSA 100 (may be taken concurrently). FA, SP, SU

ECN 220 Principles of Micro Economics (3 credits)
Microeconomics, or the theory of the firm, explains price determination and resource allocation. Topics include the supply/demand model, elasticity, the theory of consumer behavior, the theory of production and cost of production, and an examination of various market structures. Prerequisite: BSA 100 (may be taken concurrently). FA, SP, SU

FINANCE COURSES
FIN 230 Personal Finance (3 credits)
A study of the following consumer topics: consumer credit, housing, income tax, insurance (property, liability, life), investments, and estate planning. Offered on an as-needed basis.

FIN 310 Managerial Finance (3 credits)
A study of finance as a managerial tool; particular emphasis will be given to the time value of money, stock and bond pricing, working capital management and capital budgeting. Prerequisite: ACT 210. FA, SP, SU

FIN 320 Money and Banking (3 credits)
An examination of the functions of money, the commercial banking system, the Federal Reserve System, monetary policy and monetary theory. Prerequisites: ECN 210; ECN 220; FIN 310. Offered on an as-needed basis.

FIN 325 Credit Management (3 credits)
A study of consumer and commercial credit functions, credit criteria, practices, systems, policies, and decision making. An emphasis will be on retail and wholesale, entities, banks, finance companies and credit card organizations. Prerequisite: FIN 310. Offered on an as-needed basis.

FIN 330 Investments (3 credits)
A study of securities markets, along with their instruments and characteristics. Includes topics in investment theory and analysis. Prerequisite: FIN 310. Offered on an as-needed basis.

FIN 335 Commercial Banking (3 credits)
Study of the banking system and bank management with emphasis on asset/liability management, policies and practices in lending, investment, equity, trust, and international aspects of a bank. Prerequisite: FIN 310. Offered on an as-needed basis.

FIN 430 Case Studies in Finance (3 credits)
This course covers a wide-range of advanced topics in finance including evaluation of investment alternatives, trends in capital, money markets, derivative securities and management of financial and non-financial firms. Prerequisites: ACT 220; FIN 310. Offered on an as-needed basis.

HEALTHCARE MANAGEMENT COURSES
HCM 300 Foundations of Healthcare Management (3 credits)
This course provides an overview of management practices in the healthcare organizations. A review of classical management functions – planning, organizing, directing and controlling as they relate to the healthcare environment. Students will learn the skills necessary to be effective leaders in a variety of healthcare organizations. Topics include organizational culture, diversity, healthcare leadership and fundamentals of management. Offered on as needed basis.

HCM 310 Ethics in Healthcare (3 credits)
This course will provide a foundation of ethical theory, which students will apply to decision making in a healthcare environment. Students will discuss contemporary moral issues in a healthcare context and learn to analyze problems using classical ethics theories. Offered on as needed basis.

HCM 320 Human Resource Management in Healthcare (3 credits)
This is a study of the role of strategic human resources business partner within a healthcare organization. Functions such as: recruitment, interviewing, job descriptions and requirements, union-management relations, wage and salary administration, management development and motivation are examined. This course will also explore the interpersonal relationships and team dynamics that aid the HR professional in influencing decision making with both health services and clinical management within healthcare organizations. Offered on as needed basis.

HCM 330 Public Health Administration (3 credits)
This course explores the role health care organizations play in community health. Students study the principles of public health through the lens of government, business, and community. Topics include community benefit and outreach, environmental health, communicable disease, and mental health. Offered on as needed basis.
HCM 350 Legal Issues in Healthcare (3 credits)
This course provides an overview of the legal issues facing current healthcare organizations. This course examines the law as it relates to relationships between doctors, hospitals, and staff, patients, and healthcare providers. Skills developed include the ability to apply ethical decision making principles, mitigate risk, incorporate employment law procedures, and manage communication. Offered on as needed basis.

HCM 400 Healthcare Operations and Quality Control (3 credits)
Upon completion of this course, students will understand the functions and impact of day-to-day operations of hospitals, medical facilities, and clinics. The course will examine issues of efficiency and quality control. Topics include: healthcare facility management, quality control, goal setting, and evaluation, medical reporting, and organizational accountability. Prerequisites: HCM 300; MTH 115. Offered on as needed basis.

HCM 425 Management of Health Information Systems (3 credits)
This course provides an overview of information technology from a healthcare perspective. Topics include: current issues, health information management applications, security, and the ethical impact of information systems. Prerequisite: CIS 110. Offered on as needed basis.

HCM 435 Project Management in Healthcare Organizations (3 credits)
This course examines techniques necessary to successfully develop, oversee and complete projects in a healthcare environment. Skills needed to plan, estimate, organize, budget, schedule, track, and control projects are developed. Provides a comprehensive foundation to project management with a focus on healthcare organizations. Prerequisite: HCM 300. Offered on as needed basis.

HCM 460 Strategic Management in Healthcare (3 credits)
This capstone course requires students to integrate the knowledge and skills gained from previous coursework and apply it to the final assessment. Students will examine the strategic management process as it applies to the management of healthcare organizations. Prerequisite: Senior Status. Offered on as needed basis.

HUMAN RESOURCE MANAGEMENT COURSES
HRM 310 Human Resource Management (3 credits)
A comprehensive overview of human resource management functions within an organization. Topics include personnel functions of recruitment and selection, interviewing, workforce planning, wage and salary administration, talent management, and interpersonal relationship of employees in the organizational setting. Prerequisite: MGT 210. FA, SP

HRM 320 Employment Law for Managers (3 credits)
The focus of this course is on managing effectively with an understanding of the potential legal ramifications of employment decisions. Topics include discrimination, the right to privacy, evaluation, and regulation of job performance, negotiation, OSHA, ERISA, and labor law. Offered on as needed basis.

HRM 330 Interpersonal and Group Dynamics (3 credits)
The primary focus of this course is on theory and application of interpersonal relations and dynamics within an organization. This course will examine how individuals’ and teams’ behaviors and processes impact an organization. Topics will include a broad understanding of interpersonal relations and teams’ behaviors and processes, effective communication, group cohesiveness, cultural influences, attribution theory, attitudes, prejudice, persuasion, and factors that influence team function and effectiveness. Prerequisite: BUS 310; PSY 100 or SOC 100. Offered on as needed basis.

HRM 340 Compensation and Benefits (3 credits)
This course focuses on the use of pay systems and benefit plans to help organizations achieve strategic goals. In this course, students will learn about job design, job evaluation, compensation design, and benefit design and administration, and use these techniques to make effective organizational decisions. Prerequisite: MTH 115; HRM 310; FIN 310. Offered on as needed basis.

HRM 350 Training and Development (3 credits)
This course provides students with a practical application of training and development of employees within an organizational setting. The primary focus is on a systemic approach to training; specifically needs assessment, learning objectives, instructional design, learning environment, and training transfer and evaluation as well as training interventions. Prerequisites: MGT 320; HRM 310; HRM 330 (may be taken concurrently). Offered on as needed basis.
HRM 410 Advanced Human Resource Management (3 credits)
This course analyzes employee and labor relations, crisis management, and risk management. This includes the exploration of the process of unionization, labor costing, contract administration, collective bargaining and demand in labor markets, impact of unemployment, wage determination, and public policy decisions. Prerequisites: HRM 310; HRM 320. Offered on as-needed basis.

HRM 420 Strategic Human Resource Management (3 credits)
This course examines the role of human resource management in strategic planning and operation of organizations, compensation and labor management, and performance appraisals systems. Additionally, focuses on ability of human resource managers to contribute to the organizations strategic plan. This includes interpreting information from internal and external sources, aligning the human resource management plan with the strategic plan, and consideration for stakeholder impact, organizational mission, and budget management. Prerequisites: HRM 340; HRM 350; HRM 410. Offered on as-needed basis.

HRM 430 Organizational Development and Change (3 credits)
This course will focus on the theory and methods of organizational development and change. Topics will include an examination of interpersonal, team, and organizational interventions. Emphasis will be on the study and application of the planned change model to improve an organization’s performance while also improving the interests and needs of all organizational members. Prerequisite: HRM 350. Offered on as-needed basis.

HRM 460 Human Resource Management Capstone (3 credits)
Culminating experience requiring student to utilize theories and concepts; such as, compensation and benefits, training and development, and strategic planning in Human Resource Management. Prerequisites: Senior Status; HRM 420; HRM 430. Offered on as-needed basis.

MGT 210 Negotiation Skills in Business (1-3 credits)
This course introduces the theory and practice of effective negotiations. Focus is placed on the human responses to negotiations, planning for negotiations, and bargaining techniques. FA

MGT 310 Public Administration and Nonprofit Management (3 credits)
Compares and contrasts business administration and public administration. Details the job of the public administrator and explains how the public’s interest differs from the stockholder’s interest. Explains the importance of public administration as a profession and the many jobs available in the various public sectors. Prerequisite: MGT 210. SP

MGT 320 Organizational Behavior (3 credits)
This course will focus on the theory and application of individual, group, and organizational processes which shape the dynamics of an organization. Topics in attitudes, job satisfaction, individual differences, perceptions, individual decision making, motivation, group and team dynamics, leadership, organizational culture, organizational change, stress management, and human resource management will be emphasized. Prerequisite: MGT 210. FA, SP

MGT 330 Management and Business Ethics (3 credits)
A study of the process and criteria for forming and testing values and relating them to ethical obligations. Personal values are examined in relation to organizational values. Ethical systems are studied and applied to organizational and public policy issues. FA, SP

MGT 335 Elements of Supervision (3 credits)
An examination of the role of first-line supervisors within the framework of the organizational setting. The course brings into clear focus the critical function of first-line supervision as the organization’s “front line” management team. The importance of the directing function and the balance of relationships are investigated. Prerequisite: MGT 210. Offered on an as-needed basis.

MGT 340 Management and Information Systems (3 credits)
This course covers the use and management of information technologies to enhance business processes, improve business decision making, and gain competitive advantage. Additional emphasis is on the essential role of technologies proving a platform for business, commerce, and collaboration processes among all business stakeholders in today’s network enterprises and global markets. Prerequisites: CIS 100. FA
**MGT 350 Production/Operations Management (3 credits)**
A review of production, operations and supply chain management, that focuses on manufacturing environments. Special emphasis is given to quality management, inventory control, logistics, process design, forecasting, and lean production techniques used to achieve profitable and efficient operations. Prerequisite: MGT 210; MTH 115. FA, SP, SU

**MGT 360 Entrepreneurship (3 credits)**
This course will examine the definition and characteristics of entrepreneurship and how it manifests itself in small businesses, within existing corporate structures and social movements. In addition, the course will examine the key characteristics of entrepreneurship: including, recognizing, and creating opportunities, strategies and markets. FA, SP

**MGT 370 International Management (3 credits)**
An examination of management practices in a changing global market. Topics include culture, politics, planning, organizing, international human resource management, decision making, market entry and expansion, and information management. This course will include case study analysis and discussion. Prerequisites: MGT 210; BSA 310. FA

**MGT 410 Advanced Concepts in Management (3 credits)**
This course analyzes advanced and specialized topics of current concern in the field of management. In addition to providing more depth in terms of content, this course provides the student with considerable practical experience though the use of class exercises, case studies, and group discussions. Prerequisite: MGT 210. SP

**MGT 430 Case Studies/Readings in Management (1-3 credits)**
Provides the student with an opportunity to review and research a variety of topics within the current literature and to study specific management problems through the case study method. Prerequisite: MGT 210. FA, SP, SU

**MGT 440 Leadership: Managing in a Changing Environment (3 credits)**
A study of leadership techniques with a particular emphasis on managing change. This course will go beyond the basic principles of management (BUS 230) and concentrate on the skills needed to develop effective leadership in modern organizational settings. Material will draw on both research in the social sciences and case studies oriented toward organizational situations and specific leaders/skills. Prerequisite: MGT 210 or MGT 350. FA

**MGT 450 Special Project for Social Entrepreneurship (3 credits)**
The Special Project for Social Entrepreneurship will allow students to bring disciplinary expertise to working on a specific interdisciplinary concern, demonstrating their ability to collaborate across disciplines and apply their skills and talents to serving a world in need. This will be a problem-based learning experience focused on Social Entrepreneurship. Prerequisites: Students may complete an Insight Project at any point after they have completed at least 64 credit hours (including 9 credit hours in their major and 9 credit hours in the concentration in Social Entrepreneurship). Offered on an as-needed basis.

**MGT 460 Strategic Management (3 credits)**
This is the business administration core curriculum capstone course that primarily uses a computer-based business simulation model that requires group and individual performance. This performance will require the student to draw upon all previous coursework in the application of critical thinking skills. Each will demonstrate their business decision making as they formulate and implement strategies, plans, and policies for the improvement of organizational performance. Presentation and written skills will be required in all work performed. Prerequisite: Senior status. FA, SP, SU

**MARKETING COURSES**

**MKT 210 Marketing Principles (3 credits)**
Presents principles, methods and problems within the marketing discipline focusing on product development, distribution channels, promotion techniques and pricing strategies. Topics include market segmentation, buying motivation, branding, customer service, marketing research, and international marketing considerations. Prerequisite: BSA 100 (may be taken concurrently). FA, SP, SU

**MKT 310 Retail Management (3 credits)**
A study of relevant merchandising, pricing, promotional, and control techniques in the retail field of distribution. Prerequisite: MKT 210. Offered on an as-needed basis.

**MKT 320 Advertising & Promotion Management (3 credits)**
This course increases students’ understanding of advertising concepts as well as structure and functions of different “players” within the industry. Course material integrates marketing and advertising theory with application in advertising decision-making. Prerequisite: MKT 210. SP

**MKT 325 Social Media Management (3 credits)**
Analysis and application of social media advertising and marketing practices through the development and management of brand voice across multiple platforms. Course will cover content creation and optimization, monitoring, and analytics tools, lead generation, and social media strategy. Students will be required to create and
manage a social media campaign for a client using multiple platforms including Facebook, Twitter, Tumblr, Instagram, Pinterest, and WordPress blogs, among others. Prerequisite: MKT 210. SP

**MKT 330 Principles of Selling (3 credits)**
An introduction to the art of selling. Topics include types of selling and sales training, communications, and the psychology of selling and sales management (compensation and organization). Both the customer and the business perspective are considered. Prerequisite: MKT 210. SP

**MKT 340 Consumer Behavior (3 credits)**
Explores the application of the principles of psychology and other social sciences to consumer behavior. The impacts of interpersonal dynamics and social influences are studied in depth. Course material is oriented to the practical application of the basic concepts. Prerequisite: MKT 210. FA

**MKT 350 Sales Management (3 credits)**
This course examines such topics as personal selling techniques and prospecting; role playing in the sales process; evaluation of career opportunities in sales; selecting, training, compensating, and motivating a sales force; distribution methodologies, and impact on sales. Prerequisite: MKT 330. Offered on an as-needed basis.

**MKT 360 Industrial/Organizational Marketing (3 credits)**
Examines the full range of business-to-business marketing, including commercial enterprises, institutions, and government, as well as traditional industrial marketing issues. It focuses on market dynamics and stresses the strategies industries employ in developing and implementing their methods to industrial buyer behavior, market selection, product planning, product positioning, reseller’s market, and pricing. Prerequisite: MKT 210. Offered on an as-needed basis.

**MKT 410 Marketing Research (3 credits)**
Presentation of the analytical techniques required to identify target markets, consumer needs, and motivations. Includes problem discovery techniques, research design, interpretation of data, and forecasting. Attention is also given to research techniques for the smaller business enterprise. Prerequisite: MKT 210. SP

**MKT 420 International Marketing (3 credits)**
An introduction to managing marketing operations in a foreign marketplace. This course focuses on principles, policies, techniques and ethics used in international marketing strategies, and involves gathering and analyzing information in order to solve business problems on a global realm. Prerequisites: MKT 210; BSA 310. SP

**MKT 430 Case Studies/Readings in Marketing (1-3 credits)**
Provides the student with an opportunity to review a variety of topics within the current literature and to study specific marketing problems through the case study method. Prerequisite: MKT 210. FA, SP, SU

**MKT 460 Marketing Management (3 credits)**
An investigation into the managerial responsibilities, as expressed in cases, of the modern marketing executive. Marketing strategy and planning are stressed. Emphasis is placed on the techniques used to assemble the marketing mix and satisfy the needs of consumer in identified target markets. Prerequisites: MGT 210; MKT 210; Senior Status. FA

**SPORTS MANAGEMENT COURSES**

**SPT 101 Introduction to Sports Management (3 credits)**
An introduction to management principles with application to the field of sports management. The course also surveys selected topics in marketing, ethics, and law as they pertain to sports. Also explored are career paths in sports management. FA

**SPT 102 Intercollegiate Athletic Participation (1-7 credits)**
Students participating for Fontbonne University in an intercollegiate sport have the opportunity to register for this one-credit elective course. Completion of the course includes both completion of the competitive season and an acceptable required paper on a topic to be agreed upon by the student and the instructor. This course is repeatable up to four times for a total of seven credits. Prerequisite: Sports management major or approval from the director of the sports management program. FA, SP

**SPT 205 Sport Accounting and Finance (3 credits)**
This course provides a student with an extensive overview of the financial and accounting skills necessary to succeed in the sports industry. The first section of the course examines the sports industry from a macro perspective, surveying the business models of the major sports leagues, organizations, and various business sectors (such as media, licensing, facilities, etc.). The second section examines the sports industry on a micro level by teaching the practical financial and accounting skills used in day-to-day operations of sports organizations. By course end, a student will have a solid comprehension of sports finance and accounting and be able to successfully apply this knowledge to issues routinely faced by sports managers. Prerequisite: ACT 210. SP
SPT/FCS 213 Nutrition for Fitness and Physical Performance (3 credits)
Introduction to basic nutrition concepts related to fitness and physical performance of athletes at all levels. Students will also explore current issues in nutrition for athletes including ergogenic aids and weight management practices. SP

SPT 240 Sport Facility and Event Management (3 credits)
The course provides students with an understanding of the complexity involved in sport facility and event management. Sport facility management includes a variety of activities such as planning and designing a sports facility, staff management, facility marketing, developing revenue streams, and facility scheduling and operating. Sport event management consists of identifying goals of the event and coordinating people in the organizations involved to achieve those goals with the resources available. Prerequisite: SPT 101. SP

SPT 250 Case Studies and Readings in Sports Management (1-3 credits)
Provides students with an opportunity to review and research a variety of topics within the current literature and to study specific issues within the field of sports management. Prerequisite: SPT 101; approval from the director of the sports management program. FA, SP, SU

SPT 260 Sports Marketing (3 credits)
A study of the elements in the sports marketing field. Topics include sports marketing strategy, sports consumer behavior, technology as it applies to sports marketing, sports market segmentation, sports brand equity, licensing and branding merchandise, pricing, promotion, sales, sponsorship, public relations, and the future of the sports marketing industry. Prerequisite: SPT 101; MKT 210. FA

SPT 300 Legal Issues in Sports (3 credits)
This course explores several areas of potential liability as it deals with litigation in the sports field. Topics will include sports franchise rights, league issues, sports agents, anti-trust laws, intercollegiate sports and title IX, alternatives to litigation, and paths of response when confronted by a lawsuit. Prerequisite: SPT 101; BSA 210. FA

SPT 310 Social Aspects of Sports (3 credits)
An introduction to sports sociology, this course will address the social, political, and economic significance of sports in society. A variety of topics such as race, class, gender, violence, and disability in relation to American sports will be covered. Students will learn theory in analyzing sports and examine research in sports sociology. Prerequisite: SPT 101; SOC 100. FA

SPT 320 Sports Psychology (3 credits)
An overview of the psychological aspects of sports. This course focuses on the thought processes and attitudes of athletes and individuals involved in sports or exercise activities. Theoretical perspectives in relation to empirical research will be explored. Topics considered include psychological issues that confront coaches, organizations, physical educators, athletes, and teams. Prerequisites: SPT 101; PSY 100. SP

SPT 330 Leadership and Governance in Sports (3 credits)
This course places an emphasis on the introduction to management theory and how it can guide practical applications in sports industries. The course will address management philosophy, management tasks, responsibilities, organization structures, leadership, motivational techniques, decision making, and factors that influence governance, such as environmental influences, power and politics. The student will be responsible for engaging in an in-depth look at various sports governing bodies, which include such organizations as the International Olympic Committee, Arena Network, and the National Collegiate Athletic Association. Prerequisite: SPT 101. FA

SPT 460 Strategic Management in the Sports Industry (3 credits)
This capstone course addresses the strategic decision making process specific to sports organizations. Through a case study analysis, students will investigate and analyze problems, policies, duties, and ethics as they relate to sports business management and strategic planning. Prerequisite: Senior Status. SP

SPT 494 Special Topics in Sports Management (3 credits)
Provides the student with an opportunity to explore specific issues within the sports industry and the field of sports management. Opportunities for experiential and service learning are at the core of this course. Prerequisite: SPT 300. Offered on an as-needed basis.

SPT 495 Internship in Sports Management (3-9 credits)
A supervised experiential-learning course that requires the student to apply the theoretical knowledge obtained in their coursework to an actual work environment. The course will include seminar sessions and comprehensive written and oral reports. The student must clock a minimum of 150 hours and a maximum of 320 hours in the actual work environment and during the semester in which he/she is registered for this course. Prerequisite: Instructor’s Permission. FA, SP, SU
TRANSPORTATION COURSES

TRN 210 Introduction to Transportation (3 credits)
An introduction to the transportation industry, with focus on history, foundation and importance. This course will examine the operational nature of rail, marine, pipeline, motor, air and intermodal transport.

TRN 310 Transportation Management (3 credits)
An examination of the managerial aspects of transportation as a function of logistics management. Provides a basic understanding of the operations performed and tactical decisions made by transportation managers. Prerequisite: TRN 210.

TRN 320 Business Logistics (3 credits)
Focuses on the planning, implementation, and control of logistics functions, including inbound and outbound transportation management, fleet management, warehousing, network design, and inventory management. Prerequisite: TRN 210.

TRN 330 Transportation Economics and Public Policy (3 credits)
An examination of the role and function of transportation in the national and global economy, with special focus public policy issues, supply chain relationships, and environmental impact. Prerequisite: TRN 210.

TRN 350 International Transportation and Logistics (3 credits)
An analysis of transportation and logistical activities in international and global environments. Content will focus on international procurement and sourcing strategies, international and global distribution channels, international transportation tactics and strategies, intermodal operations, and import and export policies and procedures. Special attention is placed on current global events and their effect on international transportation and logistics management. Prerequisite: TRN 210.

TRN 460 Seminar in Transportation (3 credits)
A seminar providing an in-depth review and analysis of the industry evolution and application of various modes of transportation via the review of current literature and interaction with industry professionals. In addition, case studies will be utilized to bring a focus on the value phenomenon of the transportation industry and its’ key role in the pursuit of not only just-in-time strategies, but also the organizational efficiencies of the complete supply chain function. This course will also apply planning and management tools to define and solve a credible transportation problem. Verbal and written skills will be required to present and defend these proposed solutions. Prerequisites: TRN 210; Junior or Senior Status.
Department of Fashion Merchandising

MAJOR:
Fashion Merchandising (BS)

The Fashion Merchandising major provides students with a specialized core of fashion courses supported by business and liberal arts classes giving students the opportunity to choose from a variety of career options upon graduation. The fashion courses provide students with a thorough understanding of textile and apparel industries, including apparel and textile production and evaluation methods, apparel product development, buying, management skills, marketing processes, branding concepts and strategies, forecasting, promotion methods, and business skills relevant to merchandising. Special program opportunities and features include local, domestic, and global industry study tours and a required internship. Specific employment opportunities include wholesale and retail buying, retail management, visual merchandising, fashion marketing, and product development.

The International Textile and Apparel Association, Inc. (ITAA), a professional organization of textile, apparel, and retail scholars in education, business, government, and industry has developed goals for students graduating from textile, apparel, merchandising, and design institutions. The fashion merchandising curriculum integrates these voluntary goals throughout the curriculum.

FACULTY
Angela G. Liljequist, chair of fashion merchandising; assistant professor of fashion merchandising
Amy Meyers, instructor of fashion merchandising
Rogene Nelsen, assistant professor of fashion merchandising

MAJOR IN FASHION MERCHANDISING

Baccalaureate Degree and Residency Requirements
All requirements for an undergraduate degree are listed under academic policies and regulations in the undergraduate introductory section in this catalog. These requirements include a graduation requirement of at least one course in religion or theology.

Major Approval
Major approval is required during the second semester of the sophomore year, or after the completion of 45 credit hours at Fontbonne. For transfer students, major approval is required after completing the equivalent of one full semester (a minimum of 12 credits) at Fontbonne.

General Education Requirements
The 42 credit hours of general education requirements are presented in the undergraduate academic information section in this catalog. A course that meets a general education requirement may also meet a course requirement in the major or a course requirement in another discipline.

The following specific general education courses must be chosen to meet the requirements for this major:
Choose one of the following for Social & Behavior Sciences Pillar:
PSY 100 Introduction to Psychology
PSY 200 Development Psychology
SOC 100 Survey of Sociology
SOC 115 Social Problems
SOC 265 Diversity Studies

Courses Required in the Fashion Merchandising Major (56 credits):
FAS 105 Dress and Culture (3 credits)
FAS 106 Essentials of Fashion (3 credits)
FAS 107 The Fashion Industry (3 credits)
FAS 108 Fundamentals of Sewing Technologies (1 credit)
FAS 110 Fashion Merchandising Professional Seminar (1)
FAS 200 Apparel Construction (4 credits)
FAS 202 Textiles (4 credits)
FAS 205 Apparel Production and Evaluation (4 credits)
FAS 206 Fashion Brand Management (3 credits)
FAS 305 Advanced Product Development (4 credits)
FAS 307 Fashion Behavior and Forecasting (3 credits)
FAS 308 Dress History (3 credits)
FAS 309 Visual Merchandising (4 credits)
FAS 310 Promotion in the Merchandising Environment (4)
FAS 405 Principles of Fashion Merchandising and Management (3 credits)
FAS 406 Merchandise Buying: Planning and Control (3)
FAS 459 Internship Preparation Seminar (2 credits)
FAS 460 Internship in Fashion Merchandising (4-7 credits)

Courses Required in Other Disciplines (18 credits)
ACT 210 Financial Accounting (3 credits)
CIS 110 Microcomputer Applications: Spreadsheet (3 cr.)
MKT 210 Principles of Marketing (3 credits)
MGT 210 Management Principles (3 credits)
MGT 330 Management and Business Ethics (3 credits)
MGT 360 Entrepreneurship (3 credits)
MTH 105 College Algebra (4 credits) OR MTH 115 Statistics (3 credits)

COURSES
FASHION MERCHANDISING COURSES
FAS 105 Dress and Culture (3 credits)
Studies the values associated with appearance of individuals and groups within cultural, social, psychological, and economic realms; including the visual impact of the identity on the self and others. SP

FAS 106 Essentials of Fashion (3 credits)
Study of the elements and principles of design; application of design basics to specific home and apparel fashion; introduction to fashion design and designers, apparel components, and vocabulary used in the design process. Practical applications through laboratory experiences are integral to the course. FA

FAS 107 The Fashion Industry (3 credits)
Surveys fashion development through the fashion industry. Investigates the principles involved in the design, production, and marketing of fashion products from concept to consumer. Domestic and foreign fashion markets are studied. SP

FAS 108 Fundamentals of Sewing Technologies (1 credit)
Introduction to basic sewing equipment, instructions, and procedures; familiarity with supply acquisition and use; resources and uses for sewing applications; and selection of sewing projects appropriate for various skill levels. FA

FAS 110 Fashion Merchandising Professional Seminar (1 credit)
Survey of professional development practices for the fashion-merchandising field, including learning strategies for developing one’s career goals. Activities prepare students for FAS 459 Internship Preparation Seminar. FA

FAS 200 Apparel Construction (4 credits)
Examines the construction process and techniques for basic apparel products. Intensive laboratory experiences develop skills in apparel manufacturing, contrasting home and industry methods through mastery of set competencies. Development of an awareness of production techniques assists in the consumer evaluative processes related to human textile product consumption. Prerequisites: FAS 108 or consent of instructor. SP

FAS 202 Textiles (4 credits)
Analyzes physical and chemical properties of textile products. Includes the study of fibers, yarns, fabric structures, textile design, coloration, and finishing. Identification, use, care, performance, and storage of textile products are studied. Legislation and standards are examined. Laboratory experiences are integral to the course. FA

FAS 205 Apparel Production and Evaluation (4 credits)
Develops an understanding of ready-to-wear garment production and decisions involved in all phases of the production process. Analyzes techniques used by manufacturers and provides students with methods for evaluating apparel quality. Prerequisites: FAS 107; FAS 202; FAS 200 or may be taken concurrently. SP

FAS 206 Fashion Brand Management (3 credits)
Introduction to the concepts and practices of developing fashion brands. Examines the branding process including theory, analysis and application with emphasis on the interdependence of branding with merchandising and marketing activities for fashion related products. Prerequisite: FAS 107. SP

FAS 305 Advanced Product Development (4 credits)
In this course we will analyze the processes required to create a garment and provide a thorough examination of the creative and technical processes that are relevant in today’s apparel business environment. Laboratory experiences, including product development software, are an integral component to the course. Prerequisite: FAS 205. FA

FAS 307 Fashion Behavior and Forecasting (3 credits)
Social, psychological, economic, political, and communication factors influencing consumers’ fashion preferences and buying decisions are studied. Principles and methods used to forecast fashion trends are analyzed. Prerequisites: FAS 107; MKT 210; or consent of instructor. SP
FAS 308 Dress History (3 credits)
Studies the origin and development of costume from the early Mediterranean period to the present. Special focus on the change in form and function of dress in relation to the cultural and aesthetic environment in which dress was and is used, including social, religious, political, economic, and technological factors. Prerequisite: Junior status or consent of the instructor. FA

FAS 309 Visual Merchandising (4 credits)
Studies the concepts and techniques used in retail visual merchandising. Practical experience in creative problem solving through hands-on application and analysis both on-campus and at off-campus at retail locations. Prerequisites: FAS 105; FAS 106; FAS 107. FA.

FAS 310 Promotion in the Merchandising Environment (4 credits)
Studies the principles and methods used in promoting soft goods at all fashion market levels including direct marketing, publicity/public relations, advertising, special events, sales promotion, and fashion shows. Practical experiences applying the principles are gained through the production and coordination of fashion events. Prerequisites: FAS 107; MKT 210. SP

FAS 350 Fashion Merchandising Industry Experience (1-6 credits)
This course provides fashion industry experiential learning opportunities. Students will visit fashion related companies that represent various levels of the industry, including design, product development, marketing, and retailing. Students will do in-depth studies on the various fashion companies they will visit and present findings on their experiential learning experience. Prerequisite: Instructor permission required.

FAS 405 Principles of Fashion Merchandising and Management (3 credits)
Investigates the merchandising and buying functions/responsibilities in various types of apparel organizations. Covers merchandise resources in domestic and global markets, vendor relations, and negotiations. Prerequisites: FAS 107; MKT 210; Junior or senior status in FM program or consent of instructor. FA

FAS 406 Merchandise Buying: Planning and Control (3 credits)
Examines planning, buying, and selling of soft goods; emphasis on buying techniques, six-month and model stock plans, open-to-buy, and profit and loss statements. Problem solving and practical applications enhanced through merchandise math calculations and case studies. Prerequisites: Junior or senior FM status or consent of instructor. SP

FAS 459 Internship Preparation Seminar (2 credits)
Assignments, activities, and strategies used in the course will prepare students to be internship-ready. Prerequisites: Major approval and FAS 110. FA

FAS 460 Internship in Fashion Merchandising (4-7 credits)
A supervised, off-campus field-based experience in a pre-approved site specifically related to the broad area of fashion merchandising and students’ career goals. Prerequisite: FAS 459; senior status or consent of the instructor. FA, SU.

FAS 490 Fashion Merchandising Independent Study (1-4 credits)
Study in a specialized area, to be arranged according to student need and interest. Prerequisites: Junior or senior status; approval of instructor and department chairperson. Offered as an as-needed basis.

FAS 494 Fashion Merchandising Special Topics (1-6 credits)
Course offered to supplement regular course listings. Offered on an as-needed basis.