MANAGEMENT INFORMATION SYSTEMS, MS

Department of Information Systems and Quantitative Analysis, College of Information Science & Technology

Vision Statement
The Master of Science in management information systems (MIS) degree is designed to give students the skills and background needed to develop and manage an organization’s information resources, technology, and infrastructure. It will serve as a source of added knowledge and experience for MIS graduates and practitioners interested in obtaining an advanced degree. It will also provide career growth opportunities for the non-MIS and non-business degree holders who find that their careers demand graduate level MIS education. The MS in MIS prepares students for a variety of positions, including applications and web-site developer, computer network manager, business system analyst/manager, consultant, and technology manager. The MS in MIS also prepares students for admission to doctoral programs in information systems. A community advisory committee helps keep the program current with the needs of the business community.

Program Contact Information
Martina Greiner, PhD, Graduate Program Chair (GPC)
282B Peter Kiewit Institute (PKI)
402.554.2174
mgreiner@unomaha.edu

Ms. Leslie Planos, Advisor
176C Peter Kiewit Institute (PKI)
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lplanos@unomaha.edu

Ms. Vanessa Hatfield-Reeker, Advisor
175C Peter Kiewit Institute (PKI)
402.554.2073
vhatfield@unomaha.edu

Program Website (http://www.unomaha.edu/college-of-information-science-and-technology/information-systems-and-quantitative-analysis/graduate/)

Other Program Related Information
The College of IS&T offers an integrated undergraduate/graduate (IUG) track in MIS to provide outstanding undergraduate students in the College of IS&T an option to complete the BS (undergraduate) degree in MIS and the MS (graduate) degree in MIS in five years (141 total hours). The IUG program is designed for dedicated students who are motivated and willing to take on the challenges relating to graduate education earlier than other students do. As such, the program involves both intensive study and preparation in the MIS field. Students interested in this option will work closely with an advisor and a faculty mentor to develop an integrated plan of study.

The College of IS&T wishes to extend its relationship with Management Center Innsbruck (Austria) (MCI) and with the Technical University of Braunschweig (Germany) (TUB) by offering a small number of interested students the opportunity to receive both the MS in MIS (UNO) degree and the MA in management, communications and information technology (MCT) (MCI) or the Masters in MIS (TUB) degree in a two-year, full-time equivalent period. This will be implemented as an international dual degree track within the MS in MIS degree with an articulation of courses that will be transferred in both directions. The international dual degree track, like the traditional MS in MIS program, will require the equivalent of 36 US credit hours of course work beyond any foundation requirements. Students who wish to pursue this option will work closely with an advisor to develop a detailed plan of study.

Admissions
Application Deadlines (Spring 2021, Summer 2021, and Fall 2021)
- Fall: July 1
- Spring: December 1
- Summer: April 1

Program-Specific Requirements
- Applicants are required to have a command of oral and written English. Those who do not hold a baccalaureate or other advanced degree from the United States, OR a baccalaureate or other advanced degree from a predetermined country on the waiver list (https://www.unomaha.edu/graduate-studies/prospective-students/Proof%20of%20English%20Proficiency-%20International.pdf), must meet the minimum language proficiency score requirement in order to be considered for admission.
  - Paper-based TOEFL: 550
  - Computer-based TOEFL: 223
  - Internet-based TOEFL: 80
  - IELTS: 6.5
  - PTE: 53
- Applicants with International Transcripts: Any applicant to this program who has completed undergraduate or graduate coursework at an international higher education institution outside of the United States may submit transcripts and degree certificates (with an English translation) in lieu of a course-by-course transcript evaluation from World Education Services (https://www.wes.org/) (WES), Educational Credential Evaluators (https://www.ece.org/) (ECE), or Educational Perspectives (https://www.edperspective.org/). This graduate program will conduct an in-house credential evaluation of your transcript(s).
  - UNO reserves the right to require a course-by-course evaluation from WES, ECE, or Educational Perspectives if the program is unable to complete an evaluation or should there be any questions or concerns about the documentation that is received. You will be notified by the individual program if an external course-by-course evaluation is required.
  - "Note: If you are admitted, official transcripts and degree certificates (with an English translation)/official course-by-course transcript evaluation, and any applicable official exam scores are required.
- The minimum undergraduate grade point average (GPA) requirement for the MS in MIS program is 3.00 or equivalent score on a 4.00 scale. Applicants should have the equivalent of a 4-year undergraduate degree.
- An entrance exam is required for those who do not have a baccalaureate or equivalent degree from an institution of higher education in the United States. Submit GMAT or GRE scores with at least these minimum scores:
  - GRE Verbal: 144
  - GRE Quantitative: 148
  - GMAT: 500
- Writing Sample
  - Applicants are required to submit a writing sample from work or previous academic experiences. Alternatively, if you do not have a writing sample, please submit a two page double spaced word processed essay that addresses the following two topics:
• Your unique personal qualities and life experiences that
distinguish you from other applicants to our graduate program.
• Two accomplishments that demonstrate your potential for
success in the graduate program.

• Resume
  • Submit a detailed resume indicating your work experience and
    background.
  • OPTIONAL: Up to Three (3) letters of recommendation
  • Letter(s) of recommendation are encouraged, but not required,
    in instances where such letters can strengthen or support your
    application
  • You will need to provide contact information for these references
during the on-line application, and they will automatically be given
instructions for submitting the recommendation electronically.
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successful completion of at least a semester in the program.
However, a few research positions may be available to incoming
students. If you are interested in applying for one of those positions,
please submit a letter stating your research area interests and why
you feel you’d make a good GA. Please note that GA positions will
be considered after admission and program admission is not a
guarantee of receiving a GA position.

Students interested in taking courses without admission to the MS in MIS
degree program may do so with permission of the graduate program
committee. Contact mgreiner@unomaha.edu.

Requirements

Foundation Courses

Foundation courses ensure that all students in the MS Management
Information Systems (MIS) program have a strong foundation on which
to build the rest of the program. These courses not only provide essential
prerequisite knowledge and skills for other courses in the program, but they
also contain a distinct body of knowledge that is an important part of the
MIS professional’s education. All foundation courses are required for all
students. Students who have obtained an undergraduate MIS degree will
typically have this foundation. Other students, including computer science
or engineering majors, will usually have to take one or more foundation
courses. Occasionally, a student’s work experience may be sufficient to
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program committee upon the recommendation of the faculty member who
is responsible for an individual foundation course. Students requesting a
waiver for a particular course should be prepared to meet with a faculty
member and answer questions in the area of the course. They should bring
to the meeting any relevant transcripts, course syllabi, course material,
or evidence of practical experience. Some foundation courses may have an
option for testing out.

Foundation courses cannot be used to satisfy the 36 semester hours
required for the MS in MIS degree. Students who have not completed all
the foundation course requirements may be admitted on provisional status
until those requirements have satisfactorily been completed. All must
be completed prior to or concurrent with the first six hours of MS in MIS
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<td>ISQA 4900</td>
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<td>ISQA 8030</td>
<td>INFORMATION SYSTEMS AND ETHICS</td>
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Degree Requirements

TAKE ISQA 8310 AS EARLY AS POSSIBLE IN YOUR PROGRAM, provided you
have met the prerequisite of ISQA 8030 or equivalent.

Earn a total of 36 credit hours with a number 8000 or above
(excluding foundation courses listed in the admissions
requirements).

The 36 credit hours may be earned in two ways:

• Capstone option: 18 hours core classes (6 courses) + 15 hours electives
  (5 courses) + 3 hours capstone (ISQA 8950)
• Thesis option: 18 hours core classes (6 courses) + 9 hours electives
  (3 courses) + 3 hours research methods (ISQA 8060) + 6 hours thesis
  (ISQA 8990)

Capstone Option

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Electives

Select 15 credits from the following, at least one of which must
be an ISQA course:

MIS Concentrations (see Concentrations)

Approved Electives

ISQA 8950  CAPSTONE MANAGEMENT INFORMATION SYSTEMS 1  3

Total Credits 36

1 See Exit Requirements below for additional details.

Thesis Option

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Resume

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OPTIONAL: Up to Three (3) letters of recommendation

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during the on-line application, and they will automatically be given
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please submit a letter stating your research area interests and why
you feel you’d make a good GA. Please note that GA positions will
be considered after admission and program admission is not a
guarantee of receiving a GA position.

In instances where such letters can strengthen or support your
background.

distinguish you from other applicants to our graduate program.

Two accomplishments that demonstrate your potential for
success in the graduate program.

• Resume
  • Submit a detailed resume indicating your work experience and
    background.
  • OPTIONAL: Up to Three (3) letters of recommendation
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Capstone Option

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Electives

Select 15 credits from the following, at least one of which must
be an ISQA course:

MIS Concentrations (see Concentrations)

Approved Electives

ISQA 8950  CAPSTONE MANAGEMENT INFORMATION SYSTEMS 1  3

Total Credits 36

1 See Exit Requirements below for additional details.

Thesis Option

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ISQA 8410  DATA MANAGEMENT  3
ISQA 8420  MANAGING THE I.S. FUNCTION  3

Research Methods
ISQA 8060  RESEARCH IN MIS  3

Electives
Approved Electives  9
ISQA 8990  THESIS (6 Hours Required)  3

Total Credits  36

1 See Exit Requirements below for additional details.

Exit Requirements
Either pass ISQA 8950 or complete the thesis option (thesis plus thesis defense).

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<td>ISQA 8990</td>
<td>THESIS</td>
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<tr>
<td>or ISQA 8950</td>
<td>CAPSTONE MANAGEMENT INFORMATION SYSTEMS</td>
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All core classes must be complete before students may enroll in ISQA 8950.

All candidates should carefully review the Graduate College requirements for forming the Supervisory Committee, Thesis/Thesis Equivalent Proposal Approval Forms, and final approval and submission of the thesis.

Transfer students may request permission to transfer as many as twelve (12) semester hours of credit on a 36-hour program provided the courses are pertinent to the student's graduate program. Submit petitions to the Graduate Program Committee for transfer credit and include a syllabus for each course to be transferred.

Students have 7 years to complete their MS in MIS degree. The 7-year time limit starts with the first degree-program class on the plan of study.

Concentrations
The ISQA faculty has developed a set of concentrations to assist students as they work to complete the MS in MIS program. Concentrations consist of a set of elective courses that are related to a particular subject area. Students may choose to take courses that make up a concentration, or not, as they see fit. Concentrations are not minors in the traditional sense, but rather reflect areas in demand in the community. If you have any questions regarding these concentrations, please contact the MS in MIS graduate advisor.

Analytics Concentration
Data analytics uses a variety of techniques to examine large amounts of data to discover patterns that can lead to business insights. Data analytics has broad applicability in customer behavior analysis, fraud detection, scientific inquiry, process improvement, financial analysis, trend analysis, forecasting, and decision-making. Techniques may include statistical methods, data mining, modeling and simulation, and data visualization. The analytics concentration prepares students for work in the area of analytics, and also offers the necessary methodological foundation for thesis work in a master's or PhD program.

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<td>CSCI 8350</td>
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Data Analytics
ISQA 8156  ADVANCED STATISTICAL METHODS FOR IS&T
ISQA 8340  APPLIED REGRESSION ANALYSIS
ISQA 8700  DATA MINING: THEORY AND PRACTICE
ISQA 8720  APPLIED STATISTICAL MACHINE LEARNING
ISQA 8736  DECISION SUPPORT SYSTEMS
ISQA 88160 APPLIED DISTRIBUTION FREE STATISTICS
ISQA 9120  APPLIED EXPERIMENTAL DESIGN AND ANALYSIS
ISQA 9130  APPLIED MULTIVARIATE ANALYSIS
CSCI/MATH 8156 GRAPH THEORY & APPLICATIONS
ECON 8310  BUSINESS FORECASTING
CSCI/MATH 8306 DETERMINISTIC OPERATIONS RESEARCH MODELS

Data Visualization
ISQA 8525  GRAPHICAL USER INTERFACE DESIGN
ISQA 8750  STORYTELLING WITH DATA
GEOG 8535  CARTOGRAPHY AND GIS

Electives
Pick one of the remaining courses from any of the three categories above

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<tr>
<td>ISQA 8080</td>
<td>SEMINAR IN MANAGEMENT INFORMATION SYSTEMS</td>
<td>2</td>
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<td>ISQA 8086</td>
<td>SPECIAL TOPICS: INFORMATION SYSTEMS &amp; QUANTITATIVE ANALYSIS</td>
<td>2</td>
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<td>THESIS</td>
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Total Credits  12

1 This is not an exhaustive list. Other courses may be taken as electives with approval of the GPC.
2 Topic must be related to Analytics concentration area. Prior approval from the GPC is required to use this course.
3 Only three hours of the required six hours of thesis may be applied to the concentration.

Data Management Concentration
The effective management of data and information is a fundamental task not only in the information society, but also for civilization as a whole. This concentration will prepare students to manage a growing variety of types of data throughout the data lifecycle. The curriculum gives students theoretical and practical training in database design, database administration, data quality management, knowledge management, business intelligence, data integration, and data governance. Students will gain exposure to transaction processing systems, data warehouses, and XML data stores. Students may also gain experience managing geospatial data.

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<td>INFORMATION AND DATA QUALITY MANAGEMENT</td>
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1 This is not an exhaustive list. Other courses may be taken as electives with approval of the GPC.
2 Topic must be related to Analytics concentration area. Prior approval from the GPC is required to use this course.
3 Only three hours of the required six hours of thesis may be applied to the concentration.

Data Management Concentration
The effective management of data and information is a fundamental task not only in the information society, but also for civilization as a whole. This concentration will prepare students to manage a growing variety of types of data throughout the data lifecycle. The curriculum gives students theoretical and practical training in database design, database administration, data quality management, knowledge management, business intelligence, data integration, and data governance. Students will gain exposure to transaction processing systems, data warehouses, and XML data stores. Students may also gain experience managing geospatial data.
Electives
Select one of the following:  

- ISQA 8016 BUSINESS INTELLIGENCE  
- ISQA 8450 NO SQL AND BIG DATA TECHNOLOGIES  
- ISQA 8736 DECISION SUPPORT SYSTEMS  
- GEOG 8535 CARTOGRAPHY AND GIS  
- GEOG 8545 and CARTOGRAPHY & GIS LAB  
- GEOG 8056 GEOGRAPHIC INFORMATION SYSTEMS I  
- ISQA 8080 SEMINAR IN MANAGEMENT INFORMATION SYSTEMS  
- ISQA 8086 SPECIAL TOPICS: INFORMATION SYSTEMS & QUANTITATIVE ANALYSIS  
- ISQA 8900 INDEPENDENT RESEARCH IN MANAGEMENT INFORMATION SYSTEMS  
- ISQA 8990 THESIS  

Total Credits: 12

1. This is not an exhaustive list. Other courses may be taken as electives with approval of the GPC.  
2. GEOG 8535 and GEOG 8545: (2 credit hours+2 credit hours lab)  
3. Topic must be related to Data Management concentration area. Prior approval from the GPC is required to use this course.  
4. Only three hours of the required six hours of thesis credit may be applied to the concentration.

Electronic Commerce Concentration
The rise of electronic commerce offers opportunities for both research and practice. Yet a critical examination of the electronic commerce landscape is required to make sense of this subject. A multitude of technologies and applications have brought about changes in business and society that require careful consideration. Some key topics include understanding the effects of new information technologies on the value proposition, market opportunities, revenue models for business through electronic commerce, and practice in several disciplines including health informatics and clinical project management.

Electives
Select one of the following:

- ISQA 8525 GRAPHICAL USER INTERFACE DESIGN  
- ISQA 8450 INTERNET OF THINGS (IOT), BIG DATA AND THE CLOUD  
- ISQA 8750 STORYTELLING WITH DATA  
- ISQA 8080 SEMINAR IN MANAGEMENT INFORMATION SYSTEMS  
- ISQA 8086 SPECIAL TOPICS: INFORMATION SYSTEMS & QUANTITATIVE ANALYSIS  
- ISQA 8900 INDEPENDENT RESEARCH IN MANAGEMENT INFORMATION SYSTEMS  
- ISQA 8990 THESIS

Total Credits: 12

1. This is not an exhaustive list. Other courses may be taken as electives with approval of the GPC.  
2. Topic must be related to e-Commerce concentration area. Prior approval from the GPC is required to use this course.  
3. Only three hours of the required six hours of thesis credit may be applied to the concentration.

Geographic Information Systems Concentration
The use of spatial data for management, analysis, and decision-making has grown dramatically in both the public and private sectors, as global positioning systems, mobile devices, and geographic information systems (GIS) have become widespread. The concentration in GIS provides students with the technical and conceptual skills to manage geospatial data and apply it to solving geospatial problems. Students will learn the principles of geospatial data and mapping systems, global positioning systems, representation and management of geospatial data within computer systems, construction and use of maps, and the use of geospatial functions for decision-support.

Health Informatics Concentration
Students interested in health informatics or working in the health care industry are encouraged to declare a formal concentration by contacting a MS in MIS advisor. The health informatics concentration integrates MIS with biomedical informatics. The AMIA defines biomedical informatics as a multidisciplinary field that studies and pursues the effective uses of biomedical data, information, and knowledge for scientific inquiry, problem solving, and decision making, driven by efforts to improve human health. Biomedical informatics has no scientific discipline in the core that supports applied research and practice in several disciplines including health informatics and clinical informatics.
The IT Audit and Control concentration will provide students with the technical, organizational, accounting/auditing, and managerial background to plan and conduct IT audit and control activities. The concentration will cover the following conceptual areas: business risks and the management of business risk, IT risk as a component of business risk, the need to manage IT risks, basic type of controls required in a business system in order to control IT risks, controls associated with top management, system development, programming, data resource management, database, security, operations management, quality assurance, boundary controls, and communications. Issues associated with new system control risks created by the use of the internet for business applications and electronic business will also be covered in one or more courses. Students will learn and apply and integrate technical, managerial and conceptual skills needed to plan and conduct IT audits and establish appropriate controls.

Prerequisite Courses
Students must have completed at least 9 hours of the MS in MIS core courses (beyond foundation requirements) prior to enrolling for the concentration. In addition, the following preparation is required for this concentration:

\[
\begin{array}{ccc}
\text{Code} & \text{Title} & \text{Credits} \\
\text{ACCT 8280} & \text{SEMINAR IN ACCOUNTING} & 3 \\
\text{ISQA/CYBR 8570} & \text{INFORMATION SECURITY POLICY AND ETHICS} & 3 \\
\end{array}
\]

(This course is only required for students who have had no exposure to accounting fundamentals. Students will be given an automatic waiver if they have taken two semesters of accounting in their undergraduate degree.)

Requirements

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<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tr>
<td>ACCT 8280</td>
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<tr>
<td>ISQA/CYBR 8570</td>
<td>INFORMATION SECURITY POLICY AND ETHICS</td>
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Electives
Select two of the following:  

- ISQA 8596 IT AUDIT AND CONTROL  
- ISQA 8546 COMPUTER SECURITY MANAGEMENT  
- ISQA 8196 PROCESS REENGINEERING WITH INFORMATION TECHNOLOGY  
- ACCT 8066 ADVANCED MANAGERIAL ACCOUNTING  
- ACCT 8090 INFORMATION SYSTEMS AUDITING  
- ISQA 8080 SEMINAR IN MANAGEMENT INFORMATION SYSTEMS  
- ISQA 8086 SPECIAL TOPICS: INFORMATION SYSTEMS & QUANTITATIVE ANALYSIS  
- ISQA 8900 INDEPENDENT RESEARCH IN MANAGEMENT INFORMATION SYSTEMS  
- ISQA 8990 THESIS

Total Credits 12

1 This is not an exhaustive list. Other courses may be taken as electives with approval of the GPC.
2 Topic must be related to IT Audit and Control concentration area. Prior approval from the GPC is required to use this course.
3 Only three hours of the required six hours of thesis credit may be applied to the concentration.

Project Management Concentration
The Project Management concentration will provide students with the technical, organizational and managerial background to be effective project managers, project leaders, information technology managers,
and software engineers. The curriculum in this concentration integrates project management standards developed by organizations such as IEEE (The Institute of Electrical and Electronics Engineers) and PMI (Project Management Institute) with conceptual background from disciplines such as project management, software engineering, management science, psychology, organization behavior, and organization change. Students are to start coursework in the project management concentration after completion of at least 9 hours of the core courses, including ISQA 8210.

<table>
<thead>
<tr>
<th>Code</th>
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<tr>
<td>ISQA 8810</td>
<td>INFORMATION TECHNOLOGY PROJECT FUNDAMENTALS</td>
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<td>ISQA 8820</td>
<td>PROJECT RISK MANAGEMENT</td>
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<td>ISQA 8080</td>
<td>SEMINAR IN MANAGEMENT INFORMATION SYSTEMS</td>
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<td>ISQA 8086</td>
<td>SPECIAL TOPICS: INFORMATION SYSTEMS &amp; QUANTITATIVE ANALYSIS 2</td>
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<td>THESIS 2,3</td>
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1 This is not an exhaustive list. Other courses may be taken as electives with approval of the GPC.
2 Topic must be related to Project Management concentration area. Prior approval from the GPC is required to use this course.
3 Only three hours of the required six hours of thesis credit may be applied to the concentration.

Quality of Work Standards
The Graduate College’s Quality of Work standards shall be applied to foundation courses as well as courses taken as part of the degree program. In particular, the GPC will recommend to the Graduate College that any

1. Student receiving a grade of “C-” or below in any foundation courses will be automatically dismissed from the program or, in the case of unclassified or non-degree students, be automatically denied admission.
2. Student receiving a grade of “C+” or “C” in any foundation course will be placed on probation or dismissed from the program.
3. Student not maintaining a “B” (3.0 on 4.0 scale) average in foundation courses will be placed on probation or dismissed from the program.