Master of Science in Information Assurance
Admission and Degree Requirements

The School of Interdisciplinary Informatics (Si2) is the academic home of the Master of Science (MS) in Information Assurance. Information Assurance (IASC) is a rapidly expanding, multi-faceted science that integrates a diverse set of disciplines to address fundamental problems in the design, development, implementation and support of secure information systems. The Master of Science in Information Assurance is a full graduate degree program balancing theory with practice in order to provide students with the knowledge and skills necessary to protect information systems. Because of the wide variety of subject areas to which IA can be applied, this degree program has two paths; one a cyber security concentration with highly technical content, and the other an interdisciplinary degree with the opportunity for the students to tailor the degree to specific management goals. Students may also choose from a “thesis” option or “capstone” option based on individual interests. For more information regarding the Master of Science in Information Assurance program, please see http://si2.ist.unomaha.edu/?p=msia.

If you have any questions, or would like further information regarding the program, please contact:

Dr. Bill Mahoney
Si2 Graduate Program Committee Chair
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(402) 554-3975

Carla Frakes
MS in IA Advisor
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(402) 554-2073

Application Deadlines:
Fall – July 1
Spring – December 1
Summer – April 1

Admission Requirements for MS in IA Graduate Program

1. Complete and submit the Graduate Application for Admission form.
   A. Graduate Application for domestic students can be found at:
      http://www.unomaha.edu/graduate
   B. Graduate Application for international students can be found at:
      http://world.unomaha.edu/index.php?page=admissions&subpage=graduate

2. Submit a detailed resume indicating your work experience and background.

3. 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:
   A. Discussion of two accomplishments that demonstrate your potential for success in the graduate program.
   B. Discussion of your unique personal qualities and life experiences that distinguish you from other applicants to our graduate program.

4. Ask three references who can evaluate your work and/or academic achievements to write a letter of recommendation and submit via the Graduate Studies e-mail account (graduate@unomaha.edu) as an attachment. Please ask them to note your name in the subject line. There is no form to fill out. We suggest the Letter of Recommendation be submitted via a personal email address.
5. Send official transcripts of all college coursework. The minimum undergraduate grade point average requirement for the MS in IASC program is 3.00 or equivalent score on a 4.00 scale. All applicants must have the equivalent of a 4-year undergraduate degree.

6. International applicants who do not have a baccalaureate or equivalent degree from an English-speaking institution of higher education in the United States, the United Kingdom, Canada, English-speaking Africa, Australia, Ireland or New Zealand are required to submit TOEFL and GRE scores.
   A. The minimum TOEFL requirement for the MS in IA program is 550 (paper-based) / 213 (computer-based) / 79 (Internet-based).
   B. There is no minimum GRE requirement, but for international applicants the score will be one factor used in evaluating the student’s portfolio.

7. Interview (optional): Although not required, the graduate program committee may ask to conduct a telephone interview to further assess the experiences of the applicant.

Admission Criteria

All applicants are considered on an individual basis. All applicants for the MS in IASC program must have earned a bachelor’s degree from a regionally-accredited, four-year institution of higher learning or the equivalent foreign institution and earned a GPA of 3.00 (on a 4.00 scale). Since many factors influence the success of a graduate student, factors such as an applicant’s maturity, motivation, employment history, writing samples, work experience and other accomplishments will also be considered in making admission decisions. In addition, for international applicants, the GRE and TOEFL scores will be used along with other factors outlined above to make an admission decision.

Foundation Courses

Foundation courses ensure all students in the MS IASC program have a solid groundwork upon 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 IA professional’s education. All foundation courses are required for all students. However, students who have obtained an undergraduate IA degree will typically already have this foundation. In such a case, most, if not all, foundation courses are usually waived. Students with undergraduate degrees in other disciplines, including Computer Science, Management Information Systems, or Engineering, will usually require one or more foundation courses. Occasionally, a student’s work experience may be sufficient to waive one or more of these foundation courses.

Waivers for foundation courses are potentially granted by the chair of the graduate program committee upon the recommendation of the faculty member who is responsible for an individual 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 33 semester hours required for the MS in IASC degree. Students who have not completed all the foundation course requirements may be admitted on a provisional status until those requirements have been completed. All foundation courses must be completed prior to or concurrent with the first six hours of MS in IASC graduate course work.

**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

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

**Non-Degree Students**

Students interested in taking courses without admission to the MS in IASC degree program may do so with permission of the Graduate Program Committee Chair.

**Prior to Enrolling**

All students must meet with Carla Frakes, MS in IA advisor, in the first semester of attendance. One of the purposes of this meeting is to complete your Plan of Study (a listing of all courses you plan to take for the degree and the semester in which each course will be taken.) If you are going to deviate from your approved Plan of Study, you will need to see Carla prior to being able to register for the courses you want. Changes to the official Plan of Study must go through the approval process before registration. This is very important as graduation may be delayed if changes are not approved before enrollment.

**Degree Requirements**

- The Master of Science in Information Assurance degree consists of 33 hours of course content. If a student elects the thesis option, the student has a requirement of 27 hours of content, plus six hours of thesis work. If the student elects the capstone option then the degree is 30 hours of course content plus the graduate capstone class.
- The degree has two concentrations: Cyber Security, and Interdisciplinary. Details can be found in the following table:
# Masters in Information Assurance

## Foundation Requirements
Credit hours as needed

- CSCI 2240 – Intro to C Programming
- IASC 3570 – Cryptography
- CSCI 3550 – Communication Networks or ISQA 3400 – Business Data Communications
- IASC 3350 – Security Administration Linux or IASC 3370 – Security Administration Windows

## Core Courses
12 Credit Hours

- IASC 8366 – Foundations of Information Assurance
- IASC 8410 – Distributed System and Network Security
- IASC 8420 – Software Assurance
- IASC 8386 – Computer and Network Forensics

## Concentration Courses
Concentration 18 Credit Hours (Capstone Option) or 15 Credit Hours (Thesis Option)

### Cyber Security Concentration
- IASC 8456 – Host Based Vulnerability Discovery
- IASC 8466 – Network Based Vulnerability Discovery
- IASC 8460 – Security of Embedded Systems
- IASC 8470 – Secure Web Development
- IASC 8480 – Secure Mobile Development
- IASC 8490 – Advanced Computer Forensics

### Interdisciplinary Concentration

#### Management
- ISQA 8080 – Business Continuity and Disaster Recovery and/or Information Technology Governance and Compliance
- ISQA 8530 – E-Commerce Security
- ISQA 8546 – Computer Security Management
- ISQA 8560 – Information Warfare and Security
- ISQA 8570 – Information Security Policy and Ethics
- ISQA 8580 – Security Risk Analysis & Management

#### Audit
- ISQA 8596/ACCT 8096 – IT Audit and Control /Information System Auditing

#### Computer Science
- CSCI 8430 – Trusted System Design, Analysis, and Development
- CSCI 8530 – Advanced Operating Systems
- CSCI 8566 – Number Theory and Cryptography
- CSCI 8610 – Fault Tolerant Distributed Systems

### IASC 8080 – Special Topics
- IASC 8900 – Independent Study

## Capstone / Thesis Courses

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<thead>
<tr>
<th>Capstone Option</th>
<th>Thesis Option</th>
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<tr>
<td>IASC 8950 – Capstone, 3 credit hours</td>
<td>IASC 8990 – Thesis, 6 credit hours</td>
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This program of study is subject to change over time as the program develops.