MIS

Graduate Student Handbook

2017/2018

Management Information Systems
University of Arizona

MASTER'S STUDENT HANDBOOK
MANAGEMENT INFORMATION SYSTEMS

Table of Contents

INTRODUCTION

Welcome to the University of Arizona MIS Master's Program!
You are now a part of the Eller College of Management community at University of Arizona, joining one of the oldest and highly ranked MIS programs in the country. The University of Arizona's Department of Management Information Systems pioneered one of the first MIS programs in the world. The Department of Management Information Systems has been ranked in the top seven since the rankings began in 1989 by US News and World Report.

Our faculty consists of highly productive and leading scholars in various areas of MIS research, the MIS department includes several research laboratories, and associate research centers
- **https://mis.eller.arizona.edu/research-labs-and-centers** . What is really unique and exciting is that our research excellence is fully integrated into real-life business solutions and most importantly, into our academic programs.

Master's MIS programs Overview
The Master's degree in Management Information Systems (MIS) is designed to prepare students for challenging careers in the application of IT to solve various business problems. MIS professionals are the "communication bridges" between IT and the business community. They analyze, design, implement, and manage IT applications and strategies to help solve business problems. MIS students first learn business processes and then analyze how to improve the processes using IT.

MIS professionals secure positions in website design and development, consulting, security risk assessment, internet marketing, Sarbanes-Oxley audit control, business analysis, customer relationship management consulting, e-commerce, legal forensics, medical records automation, enterprise resource planning, and supply chain management.

Eller College MIS students are prepared for the future because they learn more than technical skills — they learn how to apply technical skills in support of business processes (i.e., Business skills).

Technical skills involve designing and developing Information Technology (IT) artifacts to solve problems. This skill leverages formal and quantitative modeling, mathematical and computational techniques from computer science (e.g., data mining and artificial intelligence) and operations research (e.g., optimization and graph theory), and cutting-edge technological advances (e.g., ubiquitous computing and mobile technologies), to design and implement IT artifacts. Examples of these include search and recommendation engines, models for tracking data provenance, techniques for resolving semantic interoperability among databases, web and data mining, business intelligence algorithms, and systems in areas such as team science, border security, law enforcement, and e-health.

Behavioral skills in IS analyzes the interactions of people and technology (i.e., IT artifacts) by leveraging and extending theory from areas such as psychology, sociology, management, marketing, consumer behavior, and communication. In addition, behavioral IS analysis builds theory to explain and predict important phenomena. The people include individual technology users, decision makers, virtual and co-located teams, organizations, and society. Examples of this area include studying interactions in online environments to enhance processes and improve outcomes, examining user behavior with respect to security policies to increase awareness and compliance, or understanding motivations for behavior (e.g.,

trust, sharing, and deception) in mediated environments. Methodologies include laboratory and field experiments, surveys, and case studies. A wide variety of quantitative and qualitative methods are used to analyze the data including content analysis, event analysis, analysis of variance (ANOVA), multivariate analysis, regression, structural equation modeling (SEM), and social network analysis.

Economic skills in IS uses principles and methods from the economics discipline to analyze how people, organizations, and society adopt and use information systems. Examples of this area include analysis of the competitive environment introduced by technology, understanding of consumer behavior in new economic environments brought about by technology, analysis of how economic agents inside and outside a firm interact through technology solutions, pricing and commercialization of digital goods and services. Methodologies range from microeconomic analytical models to the use of advanced econometrics with empirical data.

MIS MS PROGRAMS

Accelerated Master's in Management Information Systems (MIS AMP)	1 year
Master's in Management Information Systems (MSMIS Full Time)	1. 5 years
Master's in Management specializing in Cybersecurity (AZSecure/SFS)	2 years
Dual MBA/MS MIS	2.5 years

AMP: MIS Accelerated Master's Program

Link: link not yet available

This program allows Eller MIS undergrad (UG) senior year students to register for Graduate level courses which are applicable to both the Bachelor's and Master's degrees. It is possible to earn up to 9 units (3 courses) before being *officially* admitted into the Master's program.

UG Senior year MIS Graduate level courses are identified by both the student and the MIS MS Program Coordinator.   MIS AMP 500 Level courses normally taken are:

MIS 541 is taken in place of MIS 441 – Fall Only

MIS elective may be taken with permission – Fall or Spring

Business Pre-requisites are NOT required or MIS AMP students

MS: MIS Master's Program

Link - https://msmis.eller.arizona.edu/masters-mis-program

This program allows up to 6 transfer units of approved graduate level course work.

Business Pre-requisites MAY apply; each student is notified if business pre-reqs are required.

AZSecure/SFS Master's Program

Link: **https://msmis.eller.arizona.edu/azsecure-cybersecurity-fellowship-program**

This program requires admission into both the MS MIS Master's program and the AZSecure/SFS program; please note this program requires U.S. citizenship or permanent resident status.

Dual MISMS/MBA Master's Program
Link: **https://msmis.eller.arizona.edu/mis-mba-dual-degree-masters-program**
This program requires admission into both the MSMIS program and the MBA program. The dual degree student is able to double count up to 15 units which are applicable to both the MISMS and MBA plans of study.

MIS MS PLANS OF STUDY
AMP – Website and link not yet available
MS – **https://msmis.eller.arizona.edu/msmis-plan-of-study**
SFS – **https://msmis.eller.arizona.edu/azsecure-cybersecurity-fellowship-program/curriculum**
Dual – **https://msmis.eller.arizona.edu/mis-mba-dual-degree-masters/plan-study**

REQUIREMENTS FOR AN MS in MIS
The MS MIS course work consists of a set of core courses (33 units), 8 core MIS MS courses, a minimum of 3 MIS Elective courses and a 1 unit summer Internship course.

Core Requirements

Table 1: Core Requirements /courses plus Business Pre-requisites

Requirements	Courses
CORE **(33 – 34 units required)**	MIS 507 Software Design MIS 509 Business Communications (*D) MIS 510 Web Mining and Analytics MIS 513 Business Foundations for IT Strategy (possibly *S, *D) MIS 531: Enterprise Database Management MIS 541: Analysis and Design of Service-Oriented Systems MIS 543: Business Data Communications & Networking BNAD 597A Eller Business Consulting (MIS 696H for SFS) MIS 593 Internship
Business Pre-requisites **up to 4 units if required**	ACCT 542 Introduction to Financial & Managerial Accounting * MKTG 552 Introductory Statistics for Managers *BIA

Note: * Only required of students with a Business course deficit
* BIA only required if registering for the Business Intelligence Analytics concentration
*S NOT required of the AzSecure/SFS students
*D NOT required of the Dual Degree students (MIS 513 discuss with the MIS Program Coordinator)

Concentrations and Electives
Concentrations are determined by the chosen electives. To earn a concentration in SIA, MBO and BIA at least two electives must be completed from the concentration courses listed below. A concentration is NOT required; student may choose electives across all three concentration areas.

The AZSecure/SFS program requires all courses listed in the AZSecure/SFS section listed below..

Table 2: lists the areas of concentration

Concentration	Courses
Security Information Assurance (SIA)	MIS 515 Information Security in Public & Private Sectors MIS 516 Information Security Risk Management MIS 517 Systems Security Management MIS 527 Introduction to Enterprise Computing Environments
Managing Business Operations (MBO)	MIS 527 Introduction to Enterprise Computing Environments MIS 565 Managing for Quality Improvement MIS 577 Supply Chain MIS 578 Project Management ECON 554 Innovation and Technology Strategy
Business Intelligence & Analytics (BIA)	MIS 545 Data Mining for Business Intelligence MIS 586 Big Data Analytics MIS 587 Business Intelligence
AZSecure/SFS All courses required	MIS 599 Independent Study MIS 515 Information Security in Public & Private Sectors MIS 516 Information Security Risk Management MIS 517 Systems Security Management MIS 545 Data Mining for Business Intelligence

MIS MS Couse list

For a comprehensive list of MIS MS course offerings and a small course summary visit:
https://msmis.eller.arizona.edu/courses , you must work with your Program Coordinator in planning courses not all courses are taught each semester.

REGISTRATION REQUIREMENTS AND PROCEDURES

All Master level students register themselves via UAccess. Students may take additional course work from other departments on campus however, they may require special approval. It is up to each student to investigate the requirements to register for graduate level courses in other departments. Undergraduate units do NOT count toward the Master level unit requirements.

Non-MIS courses do NOT count toward the MSMIS degree requirements, exceptions required MIS departmental consent.

AMP, MS and Dual students work with the MIS Graduate Program Coordinator to finalize semester courses.
AZSecure/SFS students work with Dr. Mark Patton to finalize semester courses.

15 Unit Exemption Request:

All Eller MIS Master level students seeking to register in excess of 15 units shall require MIS departmental permission.

Excessive units affect the entire MSMIS program; course deliverables suffer, disproportional team work load occurs, instructional expectations may not be met, student's CGPA may be negatively impacted, student stress increases, time for internship and fulltime search is lessened.

Evaluation Criteria consists of CGPA, employment and campus community commitments and may include faculty feedback and previous team-member feedback.

The process shall include: submission of the Eller MSMIS Exception Request Form, an Academic Status Report Form and meetings with the MIS Graduate Program Coordinator and/or the MIS Program Director. To initiate the Exemption Request set up an appointment to discuss your situation with the MIS Graduate Program Coordinator.

SATISFACTORY PROGRESS
It is expected that each student will make satisfactory progress toward program/degree completion. The semester unit load ranges from 12 to 16 units.

> Domestic students must register for 7 units to be considered full time
> International students must register for 9 units to be considered full time (*except for your last semester which may be less than 9 units*)
> Assistantships, students with an assistantship may register for 6 and still be considered full time

Cumulative Grade Point Average CGPA
Students should maintain a minimum cumulative grade point average (CGPA) of 3.0, a letter grade of "D" is NOT a passing grade at the graduate level. Students who fail to maintain a minimum CGPA of 3.0 will be placed on academic probation. Students who fail to complete the program with a minimum CGPA of 3.0 will NOT be awarded their degree. Students on academic probation for two consecutive semesters will be disqualified from their program. All graduate level courses are included in your CGPA calculation.

AMP students: Once admitted into the MIS AMP program you MUST maintain a minimum UG CGPA of 3.3 to remain in the AMP program. Once your BSBA is awarded and you are officially admitted into the Master's program a minimum CGPA of 3.0 is required to be awarded the MIS MS degree. Undergraduate and Graduate CGPA's are tracked separately.

MS students: Your CGPA will be cumulative, including all graduate course work.

SFS students: Ensure you understand the consequences of failure to make successful academic progress.

Dual Students: Your CGPA will be cumulative, including both MBA and MIS course work.

Academic Probation
Link : https://grad.arizona.edu/policies/academic-policies/academic-probation

GRADUATE COLLEGE FORMS
These forms are required to process: Graduation Lists (graduate name in Graduation programs), Awarding of degrees, Curricular Practical Training and Optional Practical Training (CPT/ OPT work authorization – International students only).

More details: https://grad.arizona.edu/gcforms/academic-services-forms

UAccess Forms

Responsible Conduct of Research Statement:
All students must submit this form before they are able to submit the other forms.

MIS Master's Plans of Study (MPOS):
AMP, MS, SFS and Dual: students have the responsibility of ensuring their MPOS course listing match the actual courses taken. Your MPOS may be edited after approval, a mismatch between your MPOS and courses taken will delay the posting of your degree. When the Graduate College approves your MPOS there is a onetime charge applied to your UAccess student account.

Your Degree will NOT post until the MPOS is correct.
Ensure that:
> The Academic advisor listed is: Dr. William T. Neumann
> The correct Graduate Term is listed.

MPOS submission timeline
AMP Students: Fall 1: submit by Sept. 1, this form will allow you to pull in the 500 level courses taken as an undergrad.

MSMIS Full Time Students: Fall 1: Submit by Feb. 1; ensure you list MIS 593 Internship for summer. An approved MPOS is required for CPT approval.

SFS students: Fall 2; submit this form by August 1

Dual Students: submit this form when you have 2 semesters to MIS program completion (Sept.1 or Feb.1) Ensure that you only have 15 units double listed on your MBA and MISMS plan of study.

Master's Specialist Committee form:
Ensure the correct term is listed.
To the question …"Do you have a Committee" respond NO

Failure to submit this form will delay your degree

Master's/Specialist Committee Certification form:
Your Program Coordinator will submit this form ONLY after the MPOS and the Master's Specialist Committee forms have been then correctly submitted. This form triggers awarding your degree.

Degree Address: your degree will be mailed to the Permanent Address listed in UAccess. If you wish to have your Degree mailed to another address you MUST add a Diploma Address in UAccess.

ADVISING

Each student should meet with both the Program Coordinator and the Career Coordinator a minimum of 3 times per semester though it is recommended to meet more often. Building a strong relationship and open rapport is highly encouraged to enable these coordinators to guide you in your academic and career options.

For appointments:

Send an email which includes; the nature of the discussion, dates and times you are available to meet. The advisor will finalize the date and time that works for both (student and advisor). If you are running late or have a change of plans please notify the advisor as soon as possible.

PROGRAM CHECKLIST

First Year	December Grad	May Grad
□ Responsible code of Conduct	September of Fall 1	September of Fall 1
□ MIS Plan of Study *	February of Spring 1	November of Fall 1
□ Master's/Specialist Committee form *	n/a	March of Spring 1
□ TATO	by mid-August of Fall 1	by mid-August of Fall 1
□ Estimated Family Contribution and/or FAFSA *	August 30	August 30
□ 15 Unit Exemption *	Fall 1 registration submit form by April 1	Spring 1 registration submit form by November 1
Second Year		
□ Master's/Specialist Committee form *	October of Fall 2	March of Spring 2
□ Financial Need Based Scholarship application and supporting documents *	February 1	February 1
□ 15 Unit Exemption *	Fall 2 registration submit form by April 1	Spring 2 registration submit by November
□ Full time Exemption form * **International students only**	August 1	Jan 10
□ CPT Advisor letter *	Spring 1: April, May, June	
□ OPT Advisor letter *	Fall2: October, November, December	Spring 1: April, May, June

* Note: The Program Coordinator retains copies of all official departmental documentation. It is vital that the program coordinator is involved in obtaining and filing these documents.

APPENDIX A

Pre-arrival Checklist

<u>Before you arrive</u> DO THESE ITEMS

- ☐ **Create Netid - Everyone**
- ☐ **Establish Email account - Everyone**
- ☐ **Register ISPS international orientation- International student only**
- ☐ **Immunizations – Everyone - Email proof**
- ☐ **Temporary housing – organized thru MISGA**
- ☐ **Airport pickup – organized thru MISGA**
- ☐ **UA - UITS Tutorials – recommend brushing up on skills**
- ☐ **TATO – strongly recommended**
- ☐ **Skills I encourage you to review/gain**

NetID link - <u>https://netid.arizona.edu/</u>
- Access the link listed above
- on the left hand side select Create NETID
- Follow the instructions, I believe you will need your PIN number

CATMAIL – Frequently asked questions - <u>http://uits.arizona.edu/faq/catmail</u>
- How do I log into CatMail?
- Log in with your UA Net ID and password at the WebAuth log in window, The first time you log in to your account,
- Google will have you go through a confirmation page. After your first login, all future logins will take you directly to your account.

ISPS international orientation link – international students only
<u>http://global.arizona.edu/international-students/orientation-information</u>
- This is a mandatory orientation for all Graduate International students
- Please access the link; read all the material, note the dates for orientation
- the Userid and PW are include in your I-20 documentation
- **you must register and attend this orientation; you will not be allowed to register for courses until this is done.**

Immunizations link - required of everyone
<u>https://www.health.arizona.edu/immunization-requirements</u>
- I strongly encourage each of you to get your MMR immunizations in your home country, less expensive
- Utilize the online submission of the proof of immunizations, doing this will remove the immunization hold on your account and allow course registration.   (there are two holds against your account preventing registration 1) ISPS orientation and 2) MMR- proof)

- You may submit proof upon arriving but it's just one more thing to do in 100 degrees Fahrenheit.

Temporary housing
- MISGA is arranging temporary housing

Airport Pickups
- MISGA is arranging airport pickups

Facebook group: search for Eller YYYY (where YYYY is your admit year)
1. Request access to this group to connect with your fellow class mates and your senior class mates plus MIS Staff.
- This forum will allow you to interact with each other, find room mates, Learn from your senior class mates, interact with MIS staff, post your inquiries, etc.

UIT tutorials (excellent resource for those of you needing to brush up skills or to acquire new skills – java tutorial available)
- I wanted to remind you that there are many resources on campus for your use.
- I believe some sort of registration may be required to use this service
  Domestic students: registration for courses
  International students: registration for ISPS orientation

UITS offers many services – so if you need a refresher or want to learn a new skill try the link listed below.

1. Go to **uacbt.arizona.edu**
2. Login with netid and pw
3. It will take you to hundreds of different tutorials, choose a Java one (or anything else you want to learn about) and click the button on the right hand of the screen that says "add to my course list"

TATO - http://grad.arizona.edu/financial-resources/ta/tato
- **Complete TATO module *Staying out of Trouble Policies* required**
- GATO will become a module within TATO I will keep you posted once this has been added.
- I recommend that everyone who might want a Teaching assistantship review and complete the TATO modules.

Please ensure that you do TATO without this you may have to turn down an assistantship

Business courses: Over the summer I will identify those students needing business courses (Transcript review) at some point your preferences will be collected.
- It may be identified that you require 0-1 business courses
- Everyone needing 1 business course is required to complete Financial accounting
- The Business courses are 8 weeks in duration, they do NOT increase your semester fees

APPENDIX B

MIS 531, Incoming Student Preparation

Students can benefit from reviewing material in the following areas. The learning curve can be somewhat steep without prior experience. If time is limited, begin with SQL.

SQL
W3Schools provides a tutorial with the option of trying out your queries. See attached document for specific tutorial sections to learn and practice.

PL/SQL
UACBT has a comprehensive tutorial.
Login via: http://uits.arizona.edu/services/uacbt-computer-based-training and then search for PL/SQL. Complete the section titled: "PL/SQL (Programming Language SQL)"

Front-End for Oracle
Students have a choice of working with their preferred front-end development language (with the Oracle back-end on our department server). Most students choose one of the following options: Java/JDBC, ASP.NET, PHP.

A link is provided for tutorial resources on each platform.

- ASP.NET: http://www.oracle.com/technetwork/topics/dotnet/for-beginners/
- Java servlets / JSP: http://docs.oracle.com/cd/B28359_01/appdev.111/b28765/toc.htm
- PHP: http://www.oracle.com/technetwork/database/database-technologies/php/documentation/ (*note, the Oracle-PHP FAQ link appears broken, use: http://www.orafaq.com/wiki/PHP_FAQ*)

Note: Students will not have access to the department Oracle server until they arrive, but can download and install Oracle Express Edition for development
www.oracle.com/technetwork/database/database- technologies/express-edition/downloads/

Last Revised: 18 June 2015

W3Schools_Beginner_Tasklist
start at: http://www.w3schools.com/sql/sql_intro.asp

Complete the sections listed below. Note: some of the other sections do not use Oracle syntax, so I have left them out to avoid confusion. Other sections can be skipped for simplicity.

SQL Basic
==========
SQL SELECT
SQL SELECT DISTINCT
SQL WHERE
SQL AND & OR
SQL ORDER BY
SQL NULL values

SQL Advanced
===========
SQL LIKE
SQL IN
SQL BETWEEN
SQL JOINS
SQL UNION

SQL Functions
===========
SQL AVG()
SQL COUNT()
SQL MIN()
SQL MAX()
SQL SUM()
SQL GROUP BY
SQL HAVING

Thereafter they can progress to the PL-SQL tutorial on UACBT.
And after that to working with a web front-end to Oracle (e.g., via PHP or Java or ASP.NET)

APPENDIX C

Student recommended links

Contains tutorials for HTML, XML, Java, JavaScript, ASP.NET, SQL and many more
  Link: http://www.academictutorials.com/

SQL
- http://www.w3schools.com/sql/default.asp
- http://www.sqlcourse.com/index.html

  PLSQL
- http://plsql-tutorial.com/

JavaScript
  For those who don't know Java at all (JavaScript, Python, Ruby)
- https://www.learnstreet.com/lessons/languages/

  Good to get started, if you have some programming experience
- http://www.w3schools.com/js/default.asp

JAVA
  Book: Head First Java; Bert Bates, Kathy Sierra
         Good to start learning Java (Recommended)

  Book: SCIP Study Guide; Bert Bates, Kathy Sierra
         Concentrated on certification, but a good book for those of you who know something
         on Java

  Book: JAVA2: The Complete Reference; Herbert Schildt
         Exhaustive, for this of you who want to get deep into Java

  Link: http://www.javaworld.com/article/2076075/core-java/learn-java-from-the-ground-up.html

APIs
  Learn to use APIs
  http://www.codecademy.com/tracks/apis

ASP.NET

Good start to learn ASP.NET
Book: Sams Teach Yourself ASP.NET in 21 days; Chris Payne

Drupal
  Link: http://drupal.org/documentation