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ROADMAP

M.S.

**A MASTER'S DEGREE GUIDE
FOR INFORMATION SCIENCES
AND TECHNOLOGY STUDENTS**



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College of Information
Sciences and Technology

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About the College of Information Sciences and Technology

Solving society's most challenging problems—from responding to natural disasters to improving human health and well-being, from protecting national security to making sense of big data, from exploring the connections between gender and technology to utilizing GIS for humanitarian efforts—calls for approaches that transcend traditional disciplinary boundaries. Precise computational models are needed to learn from the vast datasets available. Scientific theory needs to describe the complex relationships we encounter in the ecosystem we live in, networked with an increasing number of virtual friends, collaborators, and customers.

At Penn State's College of Information Sciences and Technology (IST), you will receive multidisciplinary training to prepare you to address complex issues related to technology and society. Our graduate students come from a variety of backgrounds, including computer science, engineering, psychology, sociology, economics, philosophy, visual arts, and math.

The College of IST's faculty and graduate students engage in cutting-edge research in areas such as human-computer interaction, artificial intelligence and cognition, health- and bio-informatics, and psychology of terrorism, to name just a few. We excel in security informatics (or cybersecurity) research, exploring how we can better protect companies from cyber-attacks and nations from cyber war. We examine information retrieval, search engines, and big data as means to understand complex knowledge and societal and economic relationships. We study cognition and human-computer interfaces in order to comprehend how an individual's abilities and limitations fit into a connected world full of technology. To succeed in all of these areas, as a graduate student in IST you will develop important skills in math, computer science, and social and behavioral sciences. You will learn how to analyze qualitative and quantitative effects in data; and be able to understand, test, and contribute to scientific theory.

Rankings

Penn State is ranked by Times Higher Education in the top 1 percent of higher education institutions worldwide. U.S. News & World Report consistently ranks highly Penn State's graduate schools in disciplines relevant to IST. Among iSchools, a consortium of information schools dedicated to advancing the information field in the 21st century, IST at Penn State is unique in its focus on social technology, cognition, and business.

The M.S. in Information Sciences and Technology

In the M.S. program, you can engage more deeply in an intellectual conversation with research and science than an undergraduate degree allows. It typically opens up advanced career opportunities; both in industry and as a preparation for a Ph.D. As an M.S. student, you will take many of the same courses as the Ph.D. students, and have the option to produce a thesis worthy of publication or a scholarly paper that could be submitted to a conference. The M.S. program is designed to be completed in two years.

On the following pages, you will find useful information about how our M.S. program is structured, and a description of the expectations we have for our graduate students. In addition, this Handbook provides details of the University and College policies and procedures that will govern your time here at Penn State.

I. Faculty Adviser and Annual Review

Each IST M.S. student must identify a graduate adviser who is a graduate faculty member in the College of IST. The role of the faculty adviser, process used to identify faculty advisers to students entering the M.S. program, and explanation of the annual review are all described below.

A. Role of Faculty Adviser

The faculty adviser provides advice and mentoring to the M.S. student (advisee) on issues related to research and academics. During the first year of a student's M.S. study, the adviser helps the student to identify potential research topics and to begin the reading and synthesis of related literature; as appropriate the adviser also guides the student toward specific research projects and outcomes, either individually or as part of a larger ongoing research team. The adviser also provides feedback to the student about research ideas, research progress, and research outcomes. The adviser helps the student regarding his or her academic studies and in formation of the student's committee. In general the faculty adviser helps the student become familiar with the program and its requirements. Finally, the adviser assists and advises the student on career planning.

B. Adviser Matching Process for Newly Admitted Students

Students are encouraged to interact with faculty members of interest using e-mail/phone conversations during the summer prior to arriving at Penn State. In some cases, new students have already been in contact with their preferred advisers (e.g., through email or as part of the recruiting and decision process). New students should arrive on campus before mid-August to participate in Orientation, and should also use this time to conduct face-to-face meetings with potential advisers. In other cases, the student can meet with the Graduate Programs Director to suggest potential adviser matches.

New students are expected to begin their work with their adviser by mid-September of their first year. Advisers are officially recorded by filling out a Student-Adviser Agreement Form (see p.17) to be submitted to the Graduate Programs Office by October 1st.

C. Annual Review

An annual review will be conducted each March/April to evaluate the progress of M.S. students in their graduate studies. As a part of the review process, each M.S. student completes an Annual Evaluation form (see p. 23) and updates his/her curriculum vitae (CV). Then, each student meets with his/her adviser to discuss coursework completed or to be taken, research progress, related issues, and to plan for the following year. After this meeting, the adviser rates the student's performance and provides comments to explain the rating. This form should then be submitted with the student's CV to the IST Graduate Programs Office.

The annual review uses a five-point scale (Exceptional, Exceeds Expectations, Meets Expectations, Needs Improvement and Fails to Meet Performance Expectations). In the event that a student's progress is rated Needs Improvement or Fails to Meet Performance Expectations by the faculty adviser, steps are taken to understand the nature of the problems and to develop a plan for addressing these issues. On some occasions, an adviser change will be recommended; in other cases, the student may be required to complete specific tasks on a stated timeline. In yet other situations, the student may be terminated from the program.

In the event that a student's progress is viewed unsatisfactory by the faculty adviser, steps are taken to understand the nature of the problems and to develop a plan for addressing these issues. On some occasions, an adviser change will be recommended; in other cases, the student may be required to complete specific tasks on a stated timeline.

II. General Assistantship Policies

Masters students accepted to the College of IST are generally unfunded. In special cases where there is research or teaching support needs, a master's student may receive one of the three types of funding.

Assistantship appointments in IST are generally on a half-time basis requiring service of approximately 20 hours per week. Students with half-time appointments receive tuition to cover the mandatory course load of 9 to 12 credits per semester. Appointments automatically end at the conclusion of each semester and appointments carry no guarantee of renewal. Both research and teaching assistantships are contingent on satisfactory performance of assigned duties. Students may lose funding in the event that they fail to meet the responsibilities of the position.

IMPORTANT: Students who are receiving Assistantship funding should be aware that their arrival to campus at the beginning of the semester and their departure from campus at the end of the semester is impacted. These students should plan to arrive the week before the semester begins and should not schedule a departure date prior to the end of Finals Week.

1. Research Assistantships (RA)

An RA's supervisor is most often the student's faculty adviser, and will, to some degree, dictate the supporting coursework and other aspects of the research assistant's preparation needed to fulfill the assistantship responsibilities. When the two roles are performed by the same faculty member, supervision of research assistant duties and progress towards completion of the master thesis are difficult to separate. The combination of the research appointment and the registration for thesis credits should represent a realistic workload, particularly when the research assistant is still pursuing supporting coursework.

RAs may be expected to do any of the following: design and implement software; design and conduct experiments involving human subjects, including applications for Institutional Review Board (IRB) approval; collect and process data; search for materials at the University Libraries or perform Web research; interact with sponsors and vendors; prepare reports and related presentation materials; attend meetings and seminars; participate in writing manuscripts for conference and journal submissions; participate in preparing presentations for conferences; and assist in preparing research funding proposals as directed.

The RA's supervisor will clarify the specific work needed for a given research assistantship position, regularly oversee the work, and evaluate the work, dependability, and readiness of the RA to move to higher levels of responsibility such as taking the lead on data analysis, helping to supervise undergraduate research assistants, crafting of manuscripts, and making presentations.

2. Teaching Assistant/Tech Support (TA)

A TA is assigned to support one or more specific courses for a particular semester, not to support a faculty member. These funds are provided by the College. In other words, if a faculty member other than the student's adviser teaches a course to which a TA is assigned, the student is supervised in his/her teaching-related responsibilities by this other faculty member. We will refer to the faculty member who teaches the course section(s) to which a TA is assigned as the TA's supervisor. Students who receive TA support generally possess specialized skills or experience gained through prior work experience.

TAs should meet with their supervisors prior to the start of the semester, as well as during the semester. Once assignments have been announced, TAs should contact their supervisors to let them know when they are available for meetings prior to the start of the semester. Initially, the TAs should expect to receive a course syllabus, a textbook if one is

used, any information to be distributed to the students, and specific details about what they are expected to do over the course of the semester. TAs and their supervisors should discuss the instructional goals and objectives of the course and the means to accomplish them. Periodically, meetings should be held to emphasize how specific assignments or projects and how these should be evaluated. TAs should expect to attend course lectures and labs, and be aware of the instructor's emphasis and expectations of the students.

This position is provided a stipend ONLY paid on wages. TA's may expect a wide variety of assignments including the following: grading homework, projects, and examinations; preparing assignments; preparing solutions for posting or distribution; maintaining office hours and holding special lab or review sessions; helping to prepare, photocopy, and administer examinations; prepare and set up demonstrations; processing grade data, and perhaps, assigning grades.

If a TA must be absent from an assigned job due to illness, a personal emergency, or professional trips, they must notify the supervisor at the first knowledge of such an absence and work with the supervisor to ensure that his/her responsibilities are covered.

IMPORTANT: TAs should not make travel plans the week before the semester begins, during the last week of the semester, or the week immediately following the end of classes. These periods are critical for preparation before the semester begins, and for end-of-semester grading and grade calculations. In exceptional conditions a supervisor may agree to allow a TA to depart early or arrive late, but this should never be assumed by the TA. Permission for such exceptions must be requested in advance.

Before the first week of the semester, the TA and supervisor should meet and complete a TA Agreement form (see p. 25) to assure that all start-up details have been discussed and arranged. At mid-semester and again at the end of the semester, the TA and the supervisor should complete separate evaluation forms done electronically.

NOTE: Enrollment in IST 602 (Supervised Experience in College Teaching) is required for all students TA'ing during their first semester. This course is offered every spring and fall semester and is designed to help new teaching assistants become more effective in their teaching. It also provides teaching assistants with the opportunity to learn some pedagogy and to discuss problems that arise in the classroom.

III. Additional Information

A. Student Insurance

All graduate assistants and any dependents who accompany them must have health insurance. A student may choose to purchase insurance separately and provide evidence that their policy meets the standards of Penn State. Otherwise, a student can purchase insurance through Penn State. More information can be obtained by contacting the [Graduate Student Association](#) or the [Graduate Student Insurance Office](#).

B. Stipends

Stipends are delivered electronically into the student's local bank account five times each semester on the last working day of the month and twice during the summer (if hired for summer). **Please note - a newly appointed graduate assistant arriving in August may not receive his or her first paycheck until the end of September.**

C. AEOCPT

It is mandatory that all international students take the American English Oral Communication Proficiency Test (AEOCPT) upon arrival. No international student will be assigned to a teaching assistantship or as an Instructional Assistant until this test is passed or remediation steps (typically taking English language courses) have been completed. More information can be obtained by contacting the [Department of Applied Linguistics](#).

D. Scholarship and Research Integrity (SARI) Training

All graduate students are required to complete Scholarship and Research Integrity (SARI) training specified by their college/department. Penn State's Scholarship and Research Integrity (SARI@PSU) program is designed to offer Penn State researchers and scholars comprehensive, multilevel training in the responsible conduct of research (RCR), in a way that is tailored to address the issues typically faced by individual disciplines. SARI@PSU programs address topics such as publication practices and responsible authorship, conflicts of interest, research misconduct, peer review, mentoring, data management, collaborative research, human subjects' protections, and animal welfare. In general, SARI@PSU addresses these issues through two initiatives: an online RCR training program offered by CITI (Collaborative Institutional Training Initiative at the University of Miami), and interactive, discussion-based RCR education. All graduate students at Penn State, who matriculate in fall of 2009 or later, are required to complete the SARI@PSU requirements prior to graduation.

The College of IST requires two on-line module trainings in Human Subjects Research and Responsible Conduct of Research, along with five hours of discussion based training that is covered at the new student orientation. This training plan and student participation report is available from the [Office for Research Protections](#) upon request.

V. M.S. Degree Requirements

Master's degree students complete a minimum of 30 credits. M.S. students have the option of completing a Thesis or a Scholarly Paper. This decision is made in conjunction with the student's adviser and should be determined during the first year of study. Students electing to complete a Thesis take IST 600 research credits and those electing a Scholarly Paper take IST 594 research credits. Students cannot substitute IST 600 credits for IST 594 credits except by exception, approved by both the IST Graduate Programs Office and the Graduate School.

Thesis	Scholarly Paper
30 total credits	30 total credits
6 credits core courses: - IST 504 - IST 505	6 credits core courses: - IST 504 - IST 505
12 credits specialization	12 credits specialization
6 credits research methods	6 credits research methods
6 credits 600 for thesis	6 credits 594 for scholarly paper

A. Full-time Matriculation

Graduate students in the IST M.S. program are expected to matriculate on a full-time basis at the University Park campus each fall and spring semester. There are no exceptions to the requirement for full-time on-site matriculation. In addition, applicants to the M.S. program are ordinarily expected to start in the fall semester of each year.

B. General Requirements

Master's students must complete a minimum of 30 credits for both the thesis and scholarly paper option with 27 of these credits earned at the University Park campus. These include 6 credits of core requirements and 24 credits of primary and supporting field requirements. Reflecting the interdisciplinary nature of the program, many of the approved elective courses are offered by other colleges.

1. Core Requirements (6 credits)

All M.S. students are expected to develop a broad understanding of the core constructs of people, information, technology, and the significant interactions among those elements by taking IST 504 in the fall and IST 505 in the spring of their first year.

2. Research Methods Requirements (6 credits)

All candidates must develop a basic understanding of the research methods utilized in the information sciences, by taking two graduate level research methods courses offered in IST or elsewhere. The focus of the course must be on the methods being learned rather than application of some method to a research domain.

3. Specialty Area Requirements (12 credits)

In consultation with his/her adviser, a candidate is expected to choose courses in one or more areas customized to support the thesis or scholarly paper requirement. In addition to advanced courses in IST, a specialty area could be in law, business, education, engineering, the liberal arts, science, or any area that is linked to the information sciences. These courses can be at the 400 or 500 level with a maximum of 6 credits at the 400 level. Students who register for IST 596 as part of their coursework must fill out a Request for Independent Study form (see p. 18).

4. Thesis or Scholarly Paper (6 credits)

In conjunction with their adviser, students may choose a thesis or scholarly paper option. Students who choose the thesis option must write a thesis, orally defend the thesis to the thesis committee, and register for 6 credits of IST 600. The thesis should focus on a well-defined problem relevant to the information sciences. Students who choose the scholarly paper option must complete a scholarly paper and register for 6 credits of IST 594. The scholarly paper is to be a focused piece of technical work that applies the student's expertise and knowledge base, and that is documented and presented as a scholarly research paper. The scholarly paper is to be submitted to the students committee; an oral presentation is at the discretion of the student's adviser.

5. Time Limitation

All requirements for a master's degree (including acceptance of a thesis, paper, or project report as may be specified), whether satisfied on the University Park campus or elsewhere, must be met within two years of admission to degree status.

6. Language and Communication

In addition to successfully fulfilling the English competency expectation through the AEOCPT exam and/or remediation, all candidates must be competent in the English language and must have demonstrated skills in the communication of ideas both orally and in writing commensurate with the requirement of professional work. The foreign language and communication requirement may be fulfilled through demonstrating computer language proficiency (assessed through courses taken).

VI. M.S. Committee Selection

An M.S. degree-seeking student must formally select his or her M.S. degree committee no later than the completion of their general degree requirements. This normally occurs after completing the first year of studies.

This committee will be composed of at least three Penn State graduate faculty members. At least two of the committee members should be graduate faculty members of IST.

By the end of the first semester of study, the student should formulate a plan of research and begin to identify members of the Master's Degree Committee.

VII. M.S. Thesis Defense

A. Objective

The objective of the M.S. Thesis Defense is to assess a M.S. candidate's research accomplishments based on the completion of a final draft of the candidate's thesis. This is to be facilitated by the M.S. candidate submitting the final draft of the thesis to the M.S. committee and by presenting the thesis at a formal meeting of his or her committee that is open to the University community. Once the final thesis is approved, it will be submitted and archived electronically via eTD's to be accessible worldwide.

B. Graduate School Guidelines

Changes to the official [Graduate School publication](#) take precedence over the content of this section.

The M.S. candidate who has satisfied all other requirements for the degree will schedule the final examination on the recommendation of the M.S. committee chair. Three weeks' notice is required for scheduling this examination. Please go to the [IST Graduate Student website](#) to submit the IST Exam Request Form and IST degree audit (see p. 22). The deadline for holding the examination is four weeks before commencement. It is the responsibility of the M.S. candidate to provide a copy of the thesis to each member of the M.S. committee *at least two weeks* before the date of the scheduled examination.

Both the thesis adviser and the student are responsible for ensuring the completion of a draft of the thesis and for adequate consultation with members of the M.S. committee well in advance of the final oral examination. Major revisions to the thesis should be completed before this examination. The thesis should be in its final draft, with appropriate notes, bibliography, tables, etc., at the time of the final oral examination; both the content and style should be correct and polished by the time this final draft of the thesis is in the hands of the M.S. committee.

The M.S. thesis defense is an oral examination administered and evaluated by the entire M.S. committee. It consists of an oral presentation of the thesis by the candidate and a period of questions and responses. These will relate in large part to the thesis, but may cover the

candidate's entire program of study, because a major purpose of the examination is also to assess the general scholarly attainments of the candidate.

At least two members of the M.S. committee (including the thesis adviser or chair) must be physically present at the final oral examination. The graduate student also must be physically present at the exam. No more than one member may participate via telephone or video conferencing. The M.S. thesis defense request and a request for exceptions must be submitted to the Graduate Programs Office for approval at least two weeks prior to the date of the exam. Special arrangements, such as requirements for meeting participation via distance, should be communicated to the student and the M.S. committee members well in advance of the examination.

The student does not need to be registered as a full-time or part-time degree student for the semester in which the final M.S. Thesis oral examination is taken if the student is not funded on a graduate assistantship and has already completed all the required coursework.

A favorable vote of at least two-thirds of the members of the committee is required for passing the final M.S. oral examination. The results of the examination are reported to the IST Graduate Programs Office via the Completion of Master's Final Defense form (see p. 29) to become part of the student's graduate file. Students should go to the Thesis Office website and print a copy of the [Master's Signatory Page](#) (see p. 31) and have each committee member sign this form. If a candidate fails, it is the responsibility of the M.S. committee to determine whether or not another examination may be taken.

IX. General Thesis Requirements

The Graduate School, the University Libraries, and the graduate faculty of Penn State have established format standards that a thesis must meet before it receives final approval as a fulfillment of a graduate requirement. The [Thesis Office](#) is the unit of the Graduate School responsible for certifying that dissertations/theses have been prepared in accordance with these established regulations.

Every dissertation/thesis must be reviewed and approved by the Thesis Office staff. That office reviews for format only and does not edit for spelling, grammar, or punctuation. When a dissertation/thesis is submitted to the Thesis Office, it must meet the formatting and deadline requirements set forth in the latest edition of the [Thesis Guide](#). Information Technology Services (ITS) offers [PSTT](#) (Penn State Thesis Template). This is a software package that contains templates including styles, macros, toolbars, menus, and layouts. The [Statistical Consulting Center](#) gives advice to graduate students working on thesis research. The [Graduate Writing Center](#) in 111-H Kern Graduate Building provides consultation to graduate students in all disciplines.

An M.S. thesis must be submitted electronically. For more information on electronic dissertations/theses (eTDs), visit the [eTD's website](#)

In all cases, the dissertation/thesis author bears the ultimate responsibility for meeting Graduate School requirements. It is the dissertation/thesis author who must pay the dissertation/thesis fee, activate the intent to graduate, meet deadlines for submission and corrections, and obtain faculty signatures.

A summary of the dissertation/thesis submission requirements is provided below. The dissertation/thesis author should:

- Become familiar with the format requirements by reading the [Thesis Guide](#) carefully and be aware of all Graduate School and Thesis Office deadlines as indicated on the [Thesis, Dissertation, and Performance Calendar](#)
- Activate the intent to graduate on [LionPATH](#) during the semester in which you plan to graduate. Go to the [Thesis, Dissertation, and Performance Calendar](#) for deadline.
- Upload a draft of your thesis for format review (Word or pdf file) to the [eTD website](#) by the specified deadline. Corrections and detailed instructions will be returned to you by e-mail within two weeks.
- Make any changes required by the adviser and committee members. Receive approval in the form of signatures on the [Master's Signatory Page](#)
- Review the thesis one final time to be sure that no further changes are needed. It will not be possible to make corrections after final approval by the Thesis Office.
- Go to the [eTD website](#) and upload the final eTD; submit supporting materials to the Thesis Office (Note: It doesn't matter if you upload first or submit the materials first). Supporting materials are: signed Master's Signatory Page and \$25 thesis fee collected via PSUPAY.
- Await notification of thesis approval by e-mail. If changes are required, you will be notified. Your eTD will be accessible on the eTD website immediately after graduation unless you have restricted access (See top of Master's Signatory Page, p. 31).
- If bound copies are needed, contact [Multimedia & Print Center](#) on campus or you may use an off-campus source. All copies are the author's responsibility. The Graduate School does not provide copies.

VII. M.S. Scholarly Paper

A. Objective

The objective of the M.S. Scholarly Paper is defined to be a focused piece of technical work that applies the student's expertise and knowledge base. This option is for those whose primary goal is to gain advanced knowledge and skills in the information sciences and technology field. The scholarly paper will be submitted to the student's committee, an oral presentation is optional. The scholarly paper does not get submitted to the Thesis Office and is not archived.

B. IST Guidelines

The M.S. candidate who has satisfied all other requirements for the degree will submit the scholarly paper on the recommendation of the M.S. committee chair and schedule an oral presentation if desired. If a presentation is to be scheduled, three weeks' notice is required for scheduling the oral presentation. Please go to the [IST Graduate Student website](#) to complete and upload a degree audit (see p. 22) and submit a request for the completion of your M.S. scholarly paper. The deadline for holding the presentation is four weeks before commencement. It is the responsibility of the M.S. candidate to provide a copy of the scholarly paper to each member of the M.S. committee *at least two weeks* before the date of the scheduled presentation.

Both the adviser and the student are responsible for ensuring the completion of a draft of the scholarly paper and for adequate consultation with members of the M.S. committee. Major revisions to the scholarly paper should be completed before submission to the committee and oral presentation if one is scheduled. The M.S. scholarly paper is evaluated by the entire M.S. committee and the results are reported to the IST Graduate Programs Office via the Completion of Master's Scholarly Paper form (see p. 30).

If an oral presentation is scheduled, it will consist of an oral presentation of the scholarly paper by the candidate and a period of questions and responses. These will relate in large part to the scholarly paper, but may cover the candidate's entire program of study, because a major purpose of the presentation is also to assess the general scholarly attainments of the candidate. The portion of the presentation in which the scholarly paper is presented is open to the public.

If an oral presentation is scheduled, at least two members of the M.S. committee (including the adviser or chair) must be physically present. The graduate student also must be physically present. No more than one member may participate via telephone or video conferencing. The M.S. presentation request and a request for exceptions must be submitted to the Graduate Programs Office for approval at least two weeks prior to the date of the presentation. Special arrangements, such as requirements for meeting participation via distance, should be communicated to the student and the M.S. committee members well in advance of the presentation.

The student does not need to be registered as a full-time or part-time degree student for the semester in which the M.S. thesis is defended or scholarly paper is submitted or orally presented if the student is not funded on a graduate assistantship and has already completed all the required coursework.

A favorable vote of at least two-thirds of the members of the committee is required for approval of the scholarly paper and passing the M.S. oral presentation, if one was scheduled. The results are reported to the IST Office of Graduate Programs via the Completion of Master's Scholarly Paper form (see p. 30) to become part of the student's graduate file. If a candidate fails, it is the responsibility of the M.S. committee to determine whether or not another examination may be taken.

VIII. Integrated Undergraduate Degree Program

The Integrated Undergraduate Graduate (IUG) Degree Program offers the chance for highly qualified students to obtain the baccalaureate and Master's degree in less time than it would take to obtain these degrees sequentially. The IUG offers students accepted into the program to count up to 12 credits toward both their baccalaureate and Master's degree requirements. This IUG program introduces undergraduate students to the rigors of both graduate study and graduate faculty.

A. Guidelines

The graduate portion of the program requires 30 credits of coursework (6 credits of core courses, 6 credits of research methods, 12 credits of specialization, and 6 credits of research). Students in the IUG program must satisfy the requirements for both the B.S./S.R.A. in Information Sciences and Technology and the M.S. degree in Information Sciences and Technology. The first three years of the IUG program are identical to the first three year of the B.S./S.R.A. program. The fourth year of the IUG program differs from the fourth year of the B.S./S.R.A. programs because of the inclusion of courses that count toward the Masters of Science degree requirements. Students in the IUG program will take 6 credits of graduate level courses in their senior fall and spring semesters.

Students admitted into the IUG program will be monitored by his or her adviser and the IST Graduate Programs Office on an on-going basis. Students who have not maintained a 3.5 GPA in their senior year will be put on probationary status with respect to the IUG program. Their ability to continue in the IUG program will be based on their academic performance in the first semester of their graduate year.

If for any reason a student admitted to the IUG program is unable to complete the requirements for the master's degree, the student will be permitted to receive the B.S./S.R.A. degree assuming all the undergraduate degree requirements have been satisfactorily completed.

Graduate coursework in addition to undergraduate courses

Year	Fall	Spring
Year 1 (Senior Undergraduate Year)	IST 504: Foundations (3)	IST 505: Research Design (3)
	Methods course (3)**	Methods course (3)**
Year 2 (Super Senior Undergraduate Year)	IST 600 or IST 594: Thesis Research (3)	IST 600 or IST 594: Thesis Research (3)
	Grad Specialty Course (3)***	Grad Specialty Course (3)***
	Grad Specialty Course (3)***	Grad Specialty Course (3)***

Students admitted to the IUG program may double-count a maximum of 12 credits to their graduate and undergraduate degrees in Information Sciences and Technology, of which at least 50% of the courses proposed to double-count must be at the 500 or 800 level. Credits associated with the thesis or culminating scholarly paper, such as IST 594 and IST 600, may not be double-counted. Typically, students who enter the IUG Program in their senior year will use two 400-level courses from their undergraduate program to double-count as Graduate Specialty courses in their super senior undergraduate year, so that the number of graduate-level courses is a reasonable amount for students working on their research thesis or their culminating scholarly paper.

** Choose graduate level methods course in consultation with student's faculty mentor.

*** Choose any 400 or 500 level course that contributes to students' chosen area of specialty with a maximum of six credits at the 400 level.

IX. IST Graduate Program Policies

A. Transfer of Credits

Subject to the limitations given, a maximum of 10 credits of high-quality graduate work done at a regionally accredited institution may be applied toward the requirements for the master's degree. However, credits earned to complete a previous degree may not be applied to a graduate degree program at Penn State.

The student should distinguish carefully between the transferability of credit and its applicability in a particular degree program. Approval to apply any transferred credits toward a degree program must be granted first by the Graduate Programs Office, then by the student's academic adviser and the Graduate School. Transferred academic work must have been completed within five years prior to the date of first degree registration at the Graduate School, must be equivalent to

"B" quality (grades of B- are not transferrable) on Penn State's grading system, and must appear on an official graduate transcript. Coursework to be transferred must appear on an official graduate transcript of an accredited or recognized degree-granting institution. Credits earned toward a previously completed post-baccalaureate professional degree program (law, medicine, etc.) are not transferrable. However, up to 10 credits can be transferred from a professional degree program if the degree has not been conferred.

All transfer credit must be substantiated by the former institution as having at least B quality whatever grading system is in place. Pass-fail grades are not transferable to a graduate degree program unless the "Pass" can be substantiated by the former institution as having at least B quality.

The [Transfer of Credit from an External Institution](#) form can be found on the Graduate School website (see p. 32).

B. Independent Study Policy

The College of IST allows students to take independent study courses with IST graduate faculty members to learn about areas that are not taught in regular IST graduate courses or in graduate courses in other department and programs. The College will use the following guidelines for the Independent Study policy:

1. Students requesting an independent study course must submit a completed [Independent Study Form](#) to the Graduate Programs Office (see p.18).
2. The maximum number of independent study credits a student can obtain is six. The maximum hours per independent study course is three but can range from 1-3 depending on the work proposed. These credits will count towards the specialization area requirements.
3. Independent study is not to be used for thesis research. Rather, it is for students to do independent coursework on a subject that is not being offered in IST or elsewhere at Penn State.
4. The student must meet with their independent study instructor for the contact hours related to the number of requested credits. For example, a three-credit independent study would require three contact hours a week.
5. The output of the independent study course must be a deliverable that is relevant to the course and agreed upon by the student and the instructor.

C. Graduate Student Termination Policy

The College of IST Graduate Student Termination Procedure is derived from the University's policy, found in Appendix III of the Graduate Programs portion of the University Bulletin (http://bulletins.psu.edu/bulletins/whitebook/general_information.cfm?section=appendix3). This policy will pertain to both Ph.D. and M.S. students.

The termination decision process will be initiated by a recommendation from the student's adviser based on a poor academic record (e.g. transcript), no- or limited-progress in the student's research, lack of demonstrated effort, or a combination of the above. The termination recommendation will be reviewed by the Graduate Programs Director, and with concurrence, the student will be notified by the Graduate Programs Director that the termination process has been initiated. This termination recommendation then will be reviewed by the Graduate Advisory Committee. If approved by the GAC, the student will be notified in writing. The student will have 10 days to seek a review of this decision by submitting a written request to the Graduate Programs Director. The Graduate Programs Director will then have 30 days to arrange a meeting with the student and the faculty involved in the termination decision. Minutes of this meeting will be made available to all participants, and submitted to the GAC for final determination. The student will be notified in writing within five days if the decision has been sustained or reversed. If

the decision is sustained, this recommendation for termination will then be considered by the Associate Dean in charge of graduate education, and subsequently by the Dean. If approved by the Dean, the student will be notified in writing providing the reasons for the termination, the evidence upon which the termination decision was made and notice of the right to appeal in writing to the Graduate School. Termination will be effective at the end of the semester in which the final decision is made.

D. Forms

Example of student forms can be found in Appendix B. To obtain IST graduate forms please visit the [Grad Student Website](#). The Graduate School forms are available on the [Graduate School Website](#).

APPENDIX A

A MESSAGE TO ALL FACULTY, STAFF AND STUDENTS ABOUT REPORTING AND ASSISTANCE RESOURCES

As we welcome new and returning students to campus, all members of the Penn State community are asked to be mindful of their individual responsibility to help keep the University a safe and ethical institution and an accountable steward of University funds whether generated from state, federal, student, or any other sources.

The University does not condone wrongful conduct by any member of the Penn State community no matter what position he or she may hold.

Thus all members of the University community are urged to speak up if they see or suspect illegal, unethical, or unsafe conduct. If you do so, be assured that the University will protect you from retaliation. See [AD67](#) or contact the [Office of Ethics & Compliance](#) for more information.

The following resources are available for faculty, staff, students, and others:

TO MAKE A REPORT

Crime or emergency situation

- Contact the campus police or security office
- In an emergency, dial **911**

Child abuse, including child sexual abuse

- Contact the [Pennsylvania Child Welfare Services](#) "ChildLine" at **800-932-0313**
- If the child is in immediate danger, dial **911** first
- Penn State Authorized Adults (per AD72) are to also email AD72@psu.edu communicating that a report has been made. More information on [AD72](#).

Behavioral threat

- Contact the [Behavioral Threat Management Team](#) at **855-863-BTMT (2868), 814-863-BTMT (2868)**, reportBTMT@psu.edu

Bias or discrimination

- Contact the Affirmative Action Office at **814-863-0471**
- Visit the [Report Bias](#) website
- Students at University Park should call the Lion Support Help Line at 814-863-2020 to report acts of intolerance
- Students at other campuses may contact their campus Student Affairs office to report acts of intolerance

Sexual Harassment and other forms of sexual misconduct

- Contact the [Affirmative Action Office](#) at **814-863-0471** or another appropriate office listed
- To file a complaint outside of the University, contact:
 - The Office for Civil Rights (Philadelphia Office) at **(215) 656-8541** or email OCR.Philadelphia@ed.gov
 - The Equal Employment Opportunity Commission (Philadelphia District Office) at **800-669-4000**
 - The Pennsylvania Human Relations Commission (Harrisburg Regional Office) at **714-787-9780**

Research-related

- Contact the [Office for Research Protections](#) at **814-865-1775** or ORProtections@psu.edu

Suspected ethical or policy violations

(including fraud, theft, conflict of interest, retaliation, athletics compliance)

- Use Penn State Ethics and Compliance Hotline at **800-560-1637** or <https://psuethicsandcompliance.tnwreports.com> Both are anonymous and available 24/7

TO ASSIST VICTIMS

Sexual violence, sexual abuse or sexual harassment

- The Penn State Sexual Assault and Relationship Violence Hotline is available 24/7 at **800-550-7575 (TTY 866-714-7177)**
- The [University's Sexual Harassment and Assault Reporting and Education](#) (SHARE) website, which includes a list of sexual assault resources for each campus location
- The University-wide designated sexual harassment resource person for students, regardless of sex or gender, is the Director of the [Center for Women Students](#) at **814-863-2027**
- The University-wide designated sexual harassment and sexual misconduct resource person for employees is the Vice Provost for Affirmative Action at **814-864-0471**
- For University Park, the Centre County Women's Resource Center Hotline is available 24/7 at **814-234-5050** or **877-234-5050**

All others

- Contact the [Center for Counseling and Psychological Services](#) (CAPS) at **814-863-0395**
- Contact the [Employee Assistance Program](#) (EAP) at **866-799-2728**

RESOURCES

All employees should be aware of Penn State's Conflict of Interest policy. Please see the following for more information:

- <http://news.psu.edu/story/143476/2013/01/04/employees-reminded-disclose-conflicts-interest>
- Policy [HR91](#) – Conflict of Interest
- Policy [RA20](#) – Disclosure and Management of Significant Financial Interests:
- Policy [AD86](#) – Acceptance of Gifts and Entertainment

If it is not clear where to turn for assistance, any of these offices will guide the individual to someone who can help:

- [Office of Human Resources Employee Relations Division](#) at **814-865-1412**
- [Office of University Ethics and Compliance](#) at **814-867-5088**
- [Office of Affirmative Action](#) and Title IX Coordinator at **814-863-0471**
- [Office of Student Conduct](#) at **814-863-0342**
- [Office of Internal Audit](#) at **814-865-9596**
- [Clery Act](#) Compliance Manager at **814-863-7459**
- Your campus, college, or unit's Human Resources representative. Contact information is available <http://ohr.psu.edu/hr-representatives>

TRAINING

Training is available on many of the above topics. Please contact the [Office of Human Resources' Center for Workplace Learning and Performance](#) at **814-865-8216**

**Request for Independent Study* IST 596 2016-2017**

IST 596 is available for all graduate students. However, you are responsible for finding an IST faculty member willing to serve as your instructor. Please complete the following information with the instructor. ***Please remember, you are only allowed to take a maximum of 6 units' total (3 per semester) of IST 596 and it must have a deliverable.***

Name of Student: _____ PSU I.D. #: _____

Email: _____

Faculty member you will be working with: _____

Number of credits for which student is enrolling: _____

Semester for which student is enrolling: please **CIRCLE** appropriate semester/session

FA 2016 SP 2017 SU 2017 (1st 6-week) SU 2017 (2nd 6-week) SU 2017 (all semester)

Brief description of course - **Please complete full description on back page as well.**

A statement indicating why the applicant's interest cannot be served by a regularly scheduled Penn State course:

Approved:

Instructor: _____ Date: _____

Grad Director: _____ Date: _____

Fill out back side and return form to Graduate Programs, 302 IST Bldg., to obtain Grad Director's signature and add the course.

***Be sure you fully understand how your independent study credits will be used in your overall plan of study.**

Request for Independent Study (Page 2)

Title:

Course Description:

Learning Objectives:

Course Activities:

Assessment (Please be specific on how the course activities will be assessed):

Meeting Times (Please be specific on when you will meet with the instructor):

Return form to IST Graduate Programs Office. Thank you.

Graduate Student Committee Procedures and Master's Committee Appointment Signature Form

(For a complete list of master's committee policies, please refer to the Graduate Bulletin or on-line at www.bulletins.psu.edu/bulletins/whitebook/index.cfm)

- I. Justification:
A graduate student's committee is responsible for approving a student's program and promoting communication among the graduate student, the committee chair (or adviser), and the members of the committee, and, more generally, for helping to ensure the successful completion of a student's program. The committee should be appointed no later than the completion of their general degree requirements. This normally occurs after completing the first year of studies. The following **Master's Student Committee Policies and Procedures** are designed to achieve these goals, minimize misunderstandings, and help foster a collegial relationship among the graduate student, the committee chair, and the members of the committee throughout the graduate student's program. **Each master's student, chair and committee member should receive a copy of these policies and procedures.**
- II. Policies and Procedures for Master's Students and Committees:
1. The **master's committee** should meet with the student **at least once per year** to (1) provide guidance, (2) finalize and approve the research proposal of the student so that there is a clear understanding of the research goals and objectives, (3) assess the quality and progress of the research, and (4) discuss programmatic issues (e.g., course requirements).
 2. Both the **chair** and the **student** are responsible for providing a copy of the final draft of the dissertation/paper to the committee **at least 2 weeks** prior to the scheduled date of the final oral examination. The chair should schedule a date for the examination **at least three weeks** prior to the examination.
 3. Both the **chair** and the **student** are responsible for ensuring the completion of a draft of the dissertation/paper and **for adequate consultation** with members of the **master's** committee well in advance of the final oral examination. Major revisions of the dissertation/paper should be completed before this examination. The dissertation/paper should be in its "final" draft, with correct and polished content and style, appropriate notes, bibliography, tables, etc., at the time it is distributed to the committee members. **If committee members find that the draft submitted to them is not in this form, the chair is notified and postponement of the examination is considered.**
 4. **If a committee member finds that the "final" draft is not correct and polished with respect to content and style, it is his/her responsibility to notify the committee chair (or adviser) at least one week in advance of the final oral examination date.** The **committee member** should indicate his/her concerns regarding the draft and recommend consideration of postponement of the examination to the committee chair (or adviser). The **committee chair** (or adviser), in consultation with committee members, is responsible for notifying the student and assessing whether the student can make the necessary revisions to the "final" draft before the examination date. If it is determined that revisions cannot be made in time, the examination should be postponed. If differences exist among committee members, the **dean of graduate programs** should be consulted to hear the expressed concerns and determine whether the examination should be postponed.
 5. **If the dissertation is deemed unsatisfactory at the time of the examination by at least two-thirds of the committee, the student will fail the examination.** If a candidate fails, it is the responsibility of the committee to determine whether another examination may be taken by the student.
 6. The primary responsibilities of The Outside Member are to (1) maintain the academic standards of the Graduate School and (2) assure that all procedures are carried out fairly. The Outside Member represents the Graduate School and, as such, The Outside Member shall be a member of the Graduate Faculty but need not have direct expertise in the research area of the candidate. The Outside Member may contribute technical expertise, but this role is subordinate to the aforementioned primary responsibilities. The Outside Member shall not hold an appointment having a budgetary connection to or other conflict of interest in the department or academic unit to which the master's program belongs, or to the department or academic unit of the chair or dissertation adviser, and cannot serve as either chair or co-chair of the committee.

Master's Committee Appointment Signature Form

Student Name (Print or Type)

Student Number

- III. Master's Committee Appointment Signature Page: This committee will be composed of at least three members of graduate faculty with the majority of the members being tenured or tenure-track. These may all be within IST or two within IST and one external member. (The committee must have an odd number of members.)

As the student/chair/committee member, I have carefully read and agree to the policies and procedures outlined on page 1, and, if a committee member, agree to serve as a chair/committee member for the student specified.

Student: _____
Signature

Date

Chair of the Committee:
(Must be a graduate
faculty member of
IST)

Printed Name

Signature

Date

Co-Chair (if applicable):

Printed Name

Signature

Date

Thesis Adviser

Printed Name

Signature

Date

**Major Field
Member(s):**
(In addition to the chair or
co-chair)

Printed Name

Signature

Date

Printed Name

Signature

Date

Printed Name

Signature

Date

Outside Member:

Printed Name

Signature

Date

Department

**Graduate Programs
Director**

Printed Name

Signature

Date

Please note:

- (1) If the composition of the master's committee changes, a new committee appointment signature page must be resubmitted to the IST Office of Graduate Programs to be signed by the Director of Graduate Programs but only the new committee member needs to sign the form.**

IST Audit Checklist – M.S. for Fall 2016 Cohort

Name _____ Adviser _____
PSU ID _____

M.S. Core Course Requirements – 6 cr.:

IST 504 – 3 cr. _____

IST 505 – 3 cr. _____

Research Methodology – 6 cr.

(Graduate level courses)

Course: _____ 3 cr. ____

Course: _____ 3 cr. ____

6 of the 18 credits (6 methodology credits + 12 specialty credits) must be in the major (IST)

Specialty Area – 12 cr.

(Maximum 400-level credits: 6 cr.)

Course: _____ 3 cr. ____

Research Credits – 6 cr. THESIS

(IST 600 – Thesis Research)

Semester: _____ credit(s): _____

Semester: _____ credit(s): _____

Semester: _____ credit(s): _____

Research Topics – 6 cr. PAPER

(IST 594 – Research Topics)

Semester: _____ credit(s) _____

Semester: _____ credit(s) _____

Semester: _____ credit(s) _____

Adviser Signature _____ Date _____

Student signature _____ Date _____

Approval _____ Date _____
Graduate Programs Director

Information Sciences and Technology (IST) Graduate Student Annual Evaluation Form
Instructions: Complete/discuss with adviser, both of you sign/date, submit to Grad Office with current CV

Student name:	IST Program: <input type="checkbox"/> Masters <input type="checkbox"/> Ph.D.
PSU ID:	
Date:	
GPA: _____ PSU Graduate Credits: _____	Program Milestones: Candidacy Date: _____ Comprehensive Date: _____
Cohort/year entered IST graduate program: _____	
Adviser's Name:	

Recent coursework (Sum2016; Fall2016; in progress Spr2017)	Term	Grade

Were you a TA during Sp16, Su16, Fa16? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, please list course(s) _____ Grad Programs Review: <input type="checkbox"/> No unsatisfactory TA evals. <input type="checkbox"/> Unsatisfactory TA evals.		
---	--	--

In what ways have you collaborated on research or other activities over the past year – with your adviser, with other IST professors, or with any other collaborators?

Please list papers, conferences, presentations or posters that have been submitted or accepted:

How would you characterize your current progress in gaining relevant research understandings and skills (please explain)?

Are you satisfied with your progress – why or why not? What can you or others do to help you?

What are your current feelings about your academic progress, e.g. coursework that is required or expected of you, milestones that you have completed or are striving to achieve?

Adviser's overall rating: Exceptional Exceeds Expectations Meets Expectations Needs Improvement
 Fails to Meet Performance Expectations

Adviser's comments generated DURING advising meeting to explain/justify rating (if rating is less than meets expectations, please provide specific details):

Student signature

Date

Adviser Signature

Date

Co-Adviser Signature (if applicable)

Date

Graduate Programs Director Comments:

Employment Agreement for Graduate Teaching Assistants

Section I: Terms of Employment

College: Information Sciences & Technology _____

Student's Name: _____ Email: _____

Professor: _____

Course: _____

Semester/Year: _____ Hours/week: _____

Teaching Assistants (TA's) and Instructional Assistants (IA's) are graduate students who support instructors with teaching- and learning-related tasks in College of IST courses. TA's and IA's are assigned to particular instructor(s) to work on particular course(s).

Mandatory Responsibilities:

- Attend class
- Meet with instructor, as determined by instructor
- Communicate with supervising instructor, any additional teaching staff, and students in the course
- Prepare for specific teaching- and learning-related assignments

Additional Responsibilities:

As assigned by the supervising instructor (See Section II for a complete list of possible responsibilities.)

Feedback and Evaluation:

Formative feedback should be given to the TA/IA at mid-semester (ideally, to be completed by students and by the instructor). Feedback should be shared between TA/IA and instructor only. A performance evaluation should occur at the end of the semester (ideally, to be completed by students and by the instructor). The results should be shared with the TA/IA and instructor and filed in the Research & Education Office to be used in making future assignment and funding decisions.

Training:

TA's must take 1 credit of IST 602: Supervised Experience in College Teaching prior to or during their first semester as a teaching assistant.

Type of Assignment:

- Complete** = 20 hours per week for one course
- Split** = 10 hours per week for one course and 10 hours per week for a second course

Signatures on this page indicate agreement on the responsibilities checked in section II.

Teaching/Instructional Assistant's Signature

Date

Instructor's Signature

Date

Section II: Graduate Teaching Assistant Responsibilities

The following responsibilities are mandatory for all Teaching Assistants.

Communication with Instructor and Students Outside of Class

- Meet with instructor on a regular basis (usually once a week or biweekly) to discuss enrolled students' progress and/or to get briefed on upcoming class lessons/assigned work
- Respond promptly to instructor's and, if applicable, students' requests via specified means of communication

Preparation

- Review (or complete, if you never have) assigned readings, class assignments, and/or research for the course
- Organize materials (e.g., survey results, search results, class handouts) ahead of meetings and/or class sessions

Attendance

- Attend all instructor meetings, class sessions, and/or outside lectures as designated by instructor
- Provide advance notice to instructor and other teaching staff for the course if unable to attend meetings or class sessions due to sickness or other reasonable excuse

Section II: Graduate Teaching Assistant Responsibilities (continued)

The following responsibilities must be negotiated between the instructor and the Graduate Teaching Assistant.

___ *Preparing Course Materials and Exercises*

- ___ Review readings, slides, examples for class with an eye toward students' understanding and interest
- ___ Search for websites or materials needed for newly developed course activities
- ___ Take and time quizzes/exams; identify items that don't work well
- ___ Complete newly developed course assignments, estimate time to complete work, and locate problems
- ___ Check in with instructor 10 minutes prior to class for last-minute things to be done
- ___ Set-up technology (e.g. computers, projectors, networks, clickers, websites) for class, if necessary

___ *Coaching*

- ___ Listen to and help facilitate students' work on in-class assignments
- ___ Coach students who need help with individual, in-class work
- ___ Explain in-class assignments when tasks are unclear
- ___ Hold review sessions prior to exams/quizzes
- ___ Hold scheduled office hours to tutor students

___ *Team Management*

- ___ Assist instructor in creating teams
- ___ Read team minutes and projects, to keep abreast of what teams need help with
- ___ Help teams keep on task with in-class group activities

___ *Classroom Management*

- ___ Monitor quizzes and exams for cheating
- ___ Encourage student engagement, attentiveness (e.g., enforcing computer use policies)
- ___ Take attendance

___ *Feedback for Faculty on Students' Learning*

- ___ Create a message board for the students to post questions
- ___ Observe what students understand best and least so instructor knows what to review
- ___ Administer surveys and/or conduct "Classroom Assessment Techniques" (CAT's)

___ *Grading and Feedback on Students' Work*

- ___ Provide ungraded feedback on homework assignments and projects
- ___ Assist instructor in creating grading rubrics
- ___ Grade assignments and exams
- ___ Record grades in grade book
- ___ Communicate grades to students
- ___ Provide item analysis for exams and/or common misunderstandings for assignments

___ *Teaching*

- ___ Run lab associated with course
- ___ Hold occasional recitation sections
- ___ Substitute occasionally for course instruction

Additional Responsibilities

Section III: Suggestions for Instructors Working with Graduate Teaching Assistants

First Day of Class

- Explain the role of the TA to students enrolled in class
- Allow TA to introduce himself/herself

Communication with TA

- Meet with TA on a regular basis (usually once a week or biweekly) to brief TA on upcoming class lessons
- Provide performance feedback to TA at mid-semester and at the end of the semester (forms distributed by PIC office)

Class Preparation

- Prepare materials to be handed out in class in time for TA to distribute
- Check with TA 10 minutes prior to class to determine if anything needs to be done

Coaching in Class

- Invite TA to assist with group and individual work during class
- If necessary, assign TA to specific teams to help keep students on task

Team Management

- Provide the TA information and guidelines for constructing teams if s/he will be assigned to create teams for the course
- Outline role of TA in intervening with troubled teams
- Brief TA on what teams should be doing in in-class group activities (e.g., give TA key questions to ask of groups), so that the TA knows how to help keep teams on task during in-class activities
- Give TA access to team minutes, wikis, and projects if TA is to keep abreast of teams' work

Classroom Management

- Give TA access in ANGEL or the CMS necessary to see course materials in advance of the lesson
- Outline attendance procedures and any other procedures TA is responsible for
- Determine whether you will ask TA to help maintain desired classroom environment
- Provide guidelines to TA on what to say and what not to say if TA monitors quizzes and exams

Feedback on Students' Learning

- Determine if you want TA to set up message boards or other forums to collect student questions
- Design surveys with TA if you want to collect information on how students are learning

Grading and Written Feedback on Students' Work

- Coach TA on the kind of feedback to provide on homework assignments and projects
- Familiarize TA with your grading rubrics
- Make grading policies and procedures clear to TA
- Define your expectations for how you want grading done

Teaching

- Coach TA in professional skills needed for any labs, recitations, and/or substitute teaching
- Assist in preparing and/or reviewing materials for TA to use in lab, recitation, and/or substitute teaching
- Schedule any substitute teaching in advance

Completion of Master's Final Defense

On March 16, 2015, **NAME**, successfully defended his/her thesis titled: "**Secure Acquisition of Digital Evidence from VMware ESX: Hypervisors**"

Approved

Committee Chair: _____
Name: **Committee member name** Date _____

Committee Co-Chair: _____
Name: _____ Date _____

Major Field Member(s): _____
Name: **Committee member name** Date _____

Major Field Member(s): _____
Name: **Committee member name** Date _____

Outside Member(s): _____
Name: _____ Date _____

Special Member: _____
Name: _____ Date _____

Committee Decision (*A favorable vote of at least two-thirds of the committee is required for passing.*)

The committee decision is:

PASS **FAIL**

The decision was: Unanimous Divided

The committee recommends that the candidate continue working toward a Ph.D. degree.

YES **NO**

After exam, please return this form to Grad Programs 302 IST Bldg.

Completion of Master's Scholarly Paper

NAME successfully completed a scholarly paper titled: "Secure Acquisition of Digital Evidence from UMware ESX: Hypervisors"

Approved

Committee Chair:

Name: **Committee member name**

Date

Committee Co-Chair:

Name:

Date

Major Field Member(s):

Name: **Committee member name**

Date

Major Field Member(s):

Name: **Committee member name**

Date

Outside Member(s):

Name:

Date

Special Member:

Name:

Date

Committee Decision (*A favorable vote of at least two-thirds of the committee is required for passing.*)

The committee decision is:

PASS

FAIL

The decision was:

Unanimous

Divided

After exam, please return this form to Grad Programs 302 IST Bldg.

MASTER’S SIGNATORY PAGE

Name of Student _____ Penn State ID _____
Email address(s) _____

I hereby certify that I have obtained the necessary permission for copyrighted material included in my thesis and choose that the document be placed in the eTD archives with the following status:

___ **1. OPEN ACCESS** — Allows free worldwide access to the entire work beginning immediately after degree conferral. Appropriate for the majority of thesis submissions in fulfilling the requirement for making the work available to the public.

___ **2. RESTRICTED (PENN STATE ACCESS ONLY) FOR A PERIOD OF TWO YEARS*** — Access restricted to individuals having a valid Penn State Access Account. Allows restricted access of the entire work beginning immediately after degree conferral. At the end of the two-year period, the status will automatically change to Open Access. *Intended for use by authors in cases where prior public release of the work may compromise its acceptance for publication*

___ **3. RESTRICTED FOR A PERIOD OF TWO YEARS FOR PATENT DEVELOPMENT** — Restricts the entire work for patent and/or proprietary purposes. At the end of the two-year period, the status will automatically change to Open Access. Selection of this option requires that an invention disclosure (ID) be filed with the Office of Technology Management (OTM) prior to submission of the final thesis and confirmed by OTM and Office of Theses and Dissertations.

Confirmed _____

Signature of Student _____ Date _____

FACULTY APPROVAL

(a minimum of three signatures required, including dept. head or chair of graduate program)

We *accept and approve* the thesis of the student named above and agree to distribution as indicated.

Signature _____ Date _____
Print name here _____

Head or Chair of Graduate Program

Signature _____ Date _____
Print name here _____

*Requests for a two-year extension can be made by contacting the Office of Theses and Dissertations (gradthesis@psu.edu) 30 days prior to the expiration of the restriction.

Transfer of Credit from an External Institution

Office of Graduate Enrollment Services, The Pennsylvania State University, 114 Kern Building, University Park, PA 16802-3396; (814) 865-1795; (814) 863-4627

Date: _____ **From (Program Name):** _____

To: Office of Graduate Enrollment Service, 114 Kern Building

Transfer credits must meet the following criteria: (1) **MUST** have been earned at a regionally accredited U.S. institution or an officially recognized degree-granting international institution, (2) **MUST** be of "A" or "B" grade value ("B-" grades are not acceptable; pass-fail grades are not transferable unless substantiated by former institution as having at least "B" quality), (3) **MUST** appear on an **OFFICIAL** graduate transcript, and (4) **MUST** be earned within the five years prior to the date of registration to a degree program at Penn State.

Student name (last, first, middle initial) _____ Student Number _____

Degree (M.A., D.Ed., etc.) _____ Graduate Major _____

Institution where credits were earned _____ Total credits to be transferred
(Quarter credits must be converted to semester credits)

Title of course(s) to be transferred to the students program	Term Earned (F, SP, W, SU)	Year Earned	PSU Level Equivalent (400, 500, 800 Series)
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Graduate Adviser's Signature (Mandatory) _____ Please print adviser's name _____ Date _____