

ITM Graduate Student Handbook Fall 2013

Information Technology & Management Graduate Degrees

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Information Technology & Management Mission

Educate and inform students to prepare them to assume technical and managerial leadership in the information technology field.

About Information Technology & Management

Courses in our program are available at IIT's Rice Campus in Wheaton, at our Chicago Main Campus live or via videoconferencing, and at remote locations via IITV and the Internet. Courses are offered on a semester basis with the fall semester beginning in late August and the Spring semester beginning in mid-January. As this program was originally structured for working professionals, most course offerings are in the evening or on Saturday morning. To meet the needs of our full-time students, we do offer daytime classes as well, but in most cases these courses will be available online for part-time students. Courses with laboratories normally run from 5:30pm to 9:30pm one evening a week; lecture-only courses normally run 6:25pm to 9:05pm one evening a week. Because of the strong hands-on emphasis of these programs, many courses will include a laboratory. Daytime courses normally will meet two days a week for 75 minutes each session, but may meet once a week for 150 minutes.

Course Philosophy

Information Technology & Management courses are a careful blend of theory and practical application.

- ◆ *Applications:* A core goal of the Information Technology & Management degree is to teach you practical, hands-on, applied knowledge that can lead to immediate employment in the IT field. To this end, ITM courses will teach the latest applications and tools used in the field, maximizing your opportunities to make hands-on use of these application and tools. In many instances courses will be tracked to existing industry certification requirements, giving immediate employment credibility to course content. Course tracking will be to vendor-neutral certifications to the greatest extent possible but this does not preclude the teaching of vendor-specific material when appropriate.
- ◆ *Theory:* While the stress of courses in the Information Technology & Management degree is principally practical, given the scope and rapidity of change within the IT industry a solid grounding in theory is necessary to equip you to cope with the emergence of new technologies and to advance in your career in the field. A good grounding in theory is necessary to meet the goals of a university education, equipping you with critical thinking skills and the ability to see beyond "plug-and-chug" solutions all too commonly found in information technology training courses. This allows you to reason out solutions to problems rather than relying on canned solutions and blind adherence to procedure.

Our Name: Illinois Institute of Technology School of Applied Technology

Our degrees in Information Technology and Management began as a program managed by IIT's Center for Professional Development, which in turn grew out of our Professional Learning programs. In the Spring 2010 term, we transitioned to a new name and structure: the Center for Professional Development became the **IIT School of Applied Technology**, and over the summer of 2013 our degree program in Information Technology and Management became the Department of Information Technology and Management. Please bear with us as we wrap up these transitions—and celebrate with us as well, as this recognizes and acknowledges our full standing as a college and as an academic department within Illinois Institute of Technology. You may still occasionally see materials with the wording “Center for Professional Development” as it will take us some time to replace all materials with this text—but it really is from the School of Applied Technology.

Graduate Course Differentiation

When a course is offered with both undergraduate and graduate students enrolled, assignments will be differentiated within the course to reflect the higher level of achievement expected of graduate students.

- ◆ *Course Numbering:* Some courses are offered with both undergraduate and graduate sections sharing the same classroom instruction and instructor; this is reflected by the fact that the course will have both a 4XX and a corresponding 5XX section numbers. As an example, ITMO 440 has a corresponding ITMO 540 course offering. Graduate students may not enroll in a 4XX course which has a corresponding 5XX course.
- ◆ *Effort Expected of Graduate Students:* Graduate students are expected to demonstrate a substantively higher level of accomplishment than is expected of undergraduates. For valid academic reasons we have courses in our curricula which place both undergraduate and graduate students in the same classroom with the same lectures and other instructional material delivered to them. In order to ensure graduate-level work is performed by graduate students in this situation, assignments reflecting a much greater level of effort on the part of graduate students will be assigned. If the course otherwise has no paper or project assigned (for example, in a system administration course), graduate students may be required to complete a research paper or project. If a programming project is assigned, the level of complexity and effort required for projects completed by graduate students will be demonstratively greater than that assigned to undergraduates. If a paper or project is assigned, the scope and deliverables of the assignment for graduate students will reflect a greater expectation of complexity and effort required than that expected of undergraduates; for example, an undergraduate term paper may be six to ten double-spaced pages while a graduate paper may be expected to be twenty pages. Another possible avenue of differentiation might be a take-home essay section of the final exam for grad students only.

Faculty Office Hours

Faculty members will be available to you outside of class.

- ◆ *Full-Time Faculty:* Full-time faculty members and adjunct faculty members who are full-time IIT employees will establish and publish/post reasonable office hours. Office hours and location must be given on any course web sites or Blackboard and office hours must be posted prominently on the faculty members' office door. The location and times of office hours should match the location (Rice Campus or Main Campus) and times (day or evening) of the course. Faculty members should be present in their office for all posted office hours. When teaching a course that includes part-time students, faculty members should accommodate them by having some office hours on evenings and/or weekends. Additionally, faculty members must be available via email or other electronic means.
- ◆ *Adjunct Faculty:* Adjunct faculty members should maintain one to two hours of physical presence office hours if possible, and must be available via email or other electronic means. They may keep virtual office hours via a chat application or instant messaging, but must ensure all students understand clearly how to contact them if this is their office hour method.

Communications

The Department of Information Technology and Management has several paths to communicate with students.

- ◆ *IIT Email:* Your official IIT email address is the primary method of communication between the ITM Department and you. It is important that you check your email often, and any requests from you to advisers or faculty members should come from your IIT email address. If we receive email from you from another address, you can expect that any response will go to your IIT email address.
- ◆ *ITM Loopback Blog:* Any announcements, news and calendar events from the ITM Department will appear on the ITM blog, http://blogs.iit.edu/itm_loopback/. We are working hard to post daily or better. Please read the blog often! Student bloggers are welcome as well; if you would like to blog on Loopback, please contact Ray Trygstad, trygstad@iit.edu or 630.447.9009.
- ◆ *The ITM Facebook Group:* Support and interact with your fellow students, see photos, be social: <http://www.itm.iit.edu/facebook/>

Academic Honesty

As you study in our program, you will be required to submit research papers, programs, labs, quizzes and examinations. These works are very important because they are the metric—the measurement—of our ability to impart knowledge and information to you; and of your ability learn, recall and apply this knowledge and information. If you do not submit work that is your own work, we have no way to measure the success of our efforts to educate you. If you are not being academically honest—if you are cheating, you are not allowing us to adequately measure our success—or your success. Our single largest problem in the Department of Information Technology and Management is with research papers. Many students in our program have come from other nations where their secondary school and undergraduate programs never required completion of research papers, but the ability to

conduct research on a topic and present the results of that research in a research paper is absolutely required in graduate education in the United States. If this is not a skill you already possess, you must learn it to be a success in our program.

We have had reports of students boasting to employers during Curricular Practical Training that they “got through” our program by cheating. To us, this seems to be pretty stupid: why would you boast about being dishonest? Frankly we are very upset by this as this is unfair to the students who study and work hard in our program, and we are taking every step to be sure that *no one* who cheats repeatedly in our program will receive a degree from IIT.

- **Plagiarism:** The code of conduct governing writing by students at IIT requires original writing, prohibits plagiarism and provides severe sanctions for plagiarism. Original writing consists of thinking through ideas and expressing them in your own way. Plagiarism is submitting written material that contains words that are directly quoted without placing the quotation in quotation marks or as a paragraph that is set off from your text and is not accompanied by a citation of the source. It can also be a statement of a fact that is not regarded as “common knowledge” without citation of the source. Every single sentence or clause that you directly quote and every fact that is not common knowledge that you cite **MUST** have a related entry in your bibliography. The presence of one sentence or substantial phrase in your submitted work that is a direct quote and does not have the source cited in your bibliography is automatically plagiarism. Submitting the words of others as your own work is cheating and will not be tolerated in our program.
- ☞ **Writing Assistance:** Often students will find material online and cut and paste this material directly into work they submit with no citation. The main reason we find that students do this is a lack of confidence in their ability to express their thoughts well in written material. We would far prefer to see a student’s own ideas—no matter how poorly expressed—than seeing someone else’s ideas written well! If you are at IIT’s Main Campus, there is a Writing Center, (http://www.iit.edu/csl/hum/resources/writing_center.shtml), and the staff there will go over your paper with you line by line to help you with your grammar and use of language. They are there to help you learn to write better by explaining each correction to you as they are made. In addition, research librarians in Galvin or Biegler Libraries are there to assist you in ensuring that your citations and bibliography are correctly formatted; it is their job to assist you and you should not hesitate to ask them.
- ☞ **Time Pressure and Research:** Another reason students will plagiarize is that they are pressed for time and need to assemble a research paper in a very short period of time. The solution to this problem is very, very simple but represents a level of self-discipline many students have difficulty with: students need to start their research and writing with enough time to do a thorough and complete job in their own words.
- ☞ **Plagiarizing by Paraphrase:** When a writer uses a source, substitutes words and sentences, or even changes the order but keeps the meaning of the original, a citation is required. In the example given below, the original is on the left. The paraphrase on the right constitutes plagiarism. The writer could avoid plagiarism here by acknowledging the source and providing a proper citation.

Original: It is not generally recognized that at the same time when women are making their way into every corner of our work-world, only one percent of the professional engineers in the nation are female. A generation ago, this statistic would have raised no eyebrows, but today, it is hard to believe.

Paraphrase: Few people realize now that women are finding jobs in all fields, that a tiny percentage of the country’s engineers are female. Years ago this would have surprised no one, but now it seems incredible.

- ☞ **Mosaic Plagiarism:** Here the writer lifts phrases and terms from the source and embeds them in his own prose. An example follows in which the lifted phrases are underlined:
The pressure is on to get more women into engineering. The engineering schools and major corporations have opened wide their gates and are recruiting women zealously. Practically all women engineering graduates can find attractive jobs. Nevertheless, at the moment, only one percent of the professional engineers in the country are female.
 Mosaic plagiarism is sometimes caused by careless note taking. However, it looks dishonest and is judged as such. The use of quotation marks around the original wording and citation avoid the problem of plagiarism. Often a better approach is to use paraphrase or to quote directly—with appropriate citations.
- ◆ **Quoting and Referencing Material:** Ultimately we expect that any course work that you submit will contain your own words and not the words of others. You must be scrupulous about separating and referencing the words of others. Faculty members will consider unseparated or unreferenced text that others have written to be plagiarism.
 - ☞ **Citations:** Plagiarism can be avoided by providing citations for the sources of any material, including ideas, phrases, or sentences that you have used in your paper. A number of different systems are available for providing citations. The key to all of them is that the writer must clearly identify for the reader the sources of all material (including ideas) that have come from somewhere else. If you wish to use the words of others, in most cases you may if you do two things:
 - Separate the words of others from those of your own. For one or two lines, place the words in quotation marks or for longer passages quote or indent the words using different font styles.
 - Properly reference the words. See the reference information provided in the Paper Format document for your course, or in the “Writing Research Papers” section of this handbook on page 11 below.
 - ☞ **String Quotation Problem:** Sometimes a student will write a paper consisting of a string of quotations. It is usually much better for a student to provide his or her own analysis and write the paper in his or her own words. Many professors will reject a paper consisting primarily of material quoted from other sources because they do not view such a paper as the student’s own work. Due to this, many instructors may limit the amount of material that you may quote directly in an assignment. If no guidance is present, as a general rule properly attributed quoted material should not exceed 33% of the content of your paper.

- ◆ *Collaboration/Copying*: Some students in our program have found themselves pressured by classmates to give them answers to problems and assignments for courses they have already completed. This is also clearly cheating—it is dishonest and is unacceptable; students who give out this information are equally guilty of academic dishonesty as are those who ask for this information. If you are asked to do this the only acceptable answer is to just say NO. It benefits neither you nor the students who are copying your answers.
- ◆ *Acknowledgment*: Each student must read and ensure you understand both the **Illinois Institute of Technology Code of Academic Honesty** in the *The Illinois Institute of Technology Student Handbook* at http://www.iit.edu/student_affairs/handbook/ and the **Information Technology and Management Policy on Academic Honesty Violations** below. You must understand that if you commit academic dishonesty—if you cheat—there *will be consequences. You will be punished.* At a minimum you will be assigned a grade of zero for the assignment; if it is a second offense you will be given a failing grade for the class and lose our approval for participation in Curricular Practical Training (CPT) and/or Co-op/Internship programs. On a third offense, we will recommend that you be expelled from the university.

INFORMATION TECHNOLOGY AND MANAGEMENT POLICY ON ACADEMIC HONESTY VIOLATIONS

Sanctions for Information Technology and Management students When an Information Technology and Management student is found to be in violation of the academic honesty standards of the university, the faculty member involved should take the following steps:

1. **Identical or Substantively Identical Work**: If duplicate work is encountered when grading an item, assign a grade of zero for the assignment, quiz or exam on which the violation has occurred until the situation has been discussed with the students involved.
 - a. Discuss the situation with all students involved.
 - b. If one student admits to having copied the work, or if there is clear evidence who is guilty, assign the guilty student a grade of zero and grant full credit to student who did the work.
 - c. If no one admits to the offense or a reasonable determination of guilt cannot be made, assign each student involved a grade of zero
2. **Plagiarism**: If a submitted item contains unattributed material that is not a student's own work, assign a grade of zero for the assignment, quiz or exam on which the violation has occurred.
3. In either case, submit an Academic Honesty Violation Report to the ITM Departmental Coordinator, Amber Chatellier, PH 223, achatell@iit.edu, 312.567.5277.
4. If notified by the ITM Associate Chair that the violation is a second offense, expel the student from the course and assign a punitive failing grade.

When the ITM Departmental Coordinator is notified of a student violation of the academic honesty standards of the university, the Departmental Coordinator will take the following steps:

1. Determine if the violation is a first, second or third offense by consulting the student's ITM Department file and notify the ITM Associate Chair for undergraduate students.
2. If the violation is a first offense, the ITM Associate Chair will notify the Vice Provost for Academic Affairs and the Dean of the School of Applied Technology, and place a notation of the violation in the student's ITM Department file.
3. If the violation is a second offense, the ITM Associate Chair will notify the Vice Provost for Academic Affairs and the Dean of the School of Applied Technology; notify the faculty member who should expel the student from the course and assign a punitive failing grade; notify the Career Management Center and the International Office that the Department of Information Technology and Management's approval for the student's participation in Curricular Practical Training (CPT) and/or Co-op/Internship programs has been withdrawn for the current and next semesters; and place a notation of the violation in the student's ITM Department file.
4. If the violation is a third offense, the ITM Associate Chair will perform the same steps as for a second offense and notify the Dean of the School of Applied Technology that this is a third offense. The Dean of the School of Applied Technology will then recommend to the Vice Provost for Academic Affairs that the student be expelled from the university.

Program and Course Prerequisites

Prerequisites for courses and degree programs may be fulfilled through prior college course work, industry certifications or experience, or credit by examination.

- ◆ *Graduate Prerequisite*: Although a bachelor's degree is required for admission to the graduate degree program, an equivalent for the required prerequisite course for the program, ITM 301 or 302, may be completed at many community colleges prior to enrollment in the degree program. Check with an adviser to ensure that the course you have selected meets the equivalent ITM requirement.
- ◆ *Undergraduate Post-Baccalaureate studies*: Students who otherwise substantially fail to meet requirements for acceptance into the graduate degree program may be required to complete Undergraduate Post-Baccalaureate studies before beginning their graduate studies. The ITM Department requires these students to complete a minimum of twelve hours of Undergraduate Post-Baccalaureate study. Additional information on Undergraduate Post-Baccalaureate studies may be found on page 33 of the *Graduate Bulletin*.
- ◆ *Prerequisites for the Master of Cyber Forensics and Security*: This degree requires extensive prerequisites which may add an additional semester of study to the curriculum for students who have not fulfilled these requirements prior to enrolling. See the *Graduate Bulletin* for full details.

- ◆ *Waiver of Prerequisites Based on Previous Coursework, Certification or Experience:* Program or course prerequisites may be waived based on previous coursework, industry certifications or significant experience. Waivers can be granted for courses by advisers, course instructors of the course the prerequisite is required for, or the ITM Associate Chair, Ray Trygstad. Degree program prerequisite waivers and graduate core course waivers may be granted only by graduate advisers or the ITM Associate Chair. Waivers based on previous coursework or significant experience for prerequisites and/or core courses may require completion of a placement examination. See below for credit by examination and placement examination information.

Credit by Examination

Credit by examination may be granted for any course as per current university policy as found in the *Graduate Bulletin*.

- ◆ *Credit by Examination for Industry Certifications:* Credit by examination may be granted for industry certifications but this credit will not normally be granted after the end of the first semester of studies in a degree program. Many industry certifications may fulfill course requirements; while we recognize their value and applaud students who hold them, we cannot at this time grant graduate course credit for Cisco certifications. If you have industry certifications that you believe may fulfill course requirements, contact the ITM Associate Chair, Ray Trygstad (trygstad@iit.edu or 630.682.6032), for evaluation of your certification.

Placement Examinations

Students entering the Master of Information Technology and Management degree program may be required or may elect to take placement examinations based on an evaluation of their background and their undergraduate degree program.

- ◆ *Subject Placement Examinations:* Students entering the Master of Information Technology and Management degree program who desire to have a prerequisite or core course waived based on previous coursework or significant experience may be required to complete a placement examination in that subject area. The determination for the necessity of a placement exam will be made by the student's Graduate Adviser. Application development course waivers require a placement examination ensuring students can use a contemporary object-oriented programming language; students will be requested to complete a representative set of basic programming tasks and will have a choice of programming languages in which to complete the tasks—Visual Basic is not an acceptable language for this purpose. For all exams, references may be consulted, but each test is timed such that knowledge and experience in the subject area is necessary. Students who cannot satisfactorily complete the exam will be expected to complete the applicable prerequisite or program core course. When directed to take a placement examination, students will contact Professor Jeremy Hajek to arrange for administration and grading of the examination.
- ◆ *English Writing Proficiency:* Students who are not required to complete the Test of English as a Foreign Language (TOEFL) but do not have English as their first language, or who have very weak scores on the GRE Verbal may be required to complete an English assessment examination. Based on the outcome of the assessment, students may be required to enroll in and successfully complete one or more Proficiency of English as a Second Language (PESL) courses.

Syllabus

Instructors will provide a detailed syllabus for you delineating the objectives of the course which may also detail specific learning objectives for each lesson.

- ◆ *Syllabus Content:* You can expect a course syllabus to cover learning objectives and expected outcomes, both for the course and for each lesson or session; topics covered in the class; homework assignments; projects; exams; grading policies; and a clear policy on handling of late assignments /projects and academic irregularities.

Grading

Suggested grading standards for graduate students:

A Outstanding work reflecting substantial effort.....	90-100%
B Adequate work fully meeting that expected of a graduate student.....	80-89.99%
C Weak but marginally satisfactory work not meeting expectations.....	65-79.99%
E Unsatisfactory work.....	0-64.99%

There is no grade of **D** for graduate students.

- ◆ *Submission of Grades:* Your instructors will submit grades for all courses online; normally they must be submitted by the end of the first Tuesday following the final day of the term but this may vary. Your grade will normally appear on your unofficial transcript in MyIIT within a few minutes of posting.
- ◆ *Attendance:* Class attendance is expected of all students enrolled in live (i.e. not online) sections of a class. At the instructor's discretion, students in live sections who do not attend class may be penalized in a class participation component of the course grade; this should be explained explicitly in the course syllabus.
- ◆ *Extensions for Completion of Courses:* You may be assigned a grade of "I" (incomplete) if, in the instructor's opinion, there is a valid reason for an extension of time to complete your coursework in a particular course. You should complete the coursework by the deadline to remove "I" grades, which is normally five weeks after the beginning of the following semester.
- ◆ *Withdrawal from a Course:* If you determine that you will be unable to complete a course with a passing grade, it is advisable to withdraw from the course rather than have the failing grade appear on your transcript. The deadline for withdrawal is normally six weeks prior to the end of the term; consult the academic calendar for the current term for the exact date. A grade of "WP" (withdrew passing) or "WE"

(withdrew failing) will appear for the course on your transcript. This grade does not apply toward your GPA and no credit is awarded for the course, but **payment is still required for the course**. If you have been ill or have other mitigating circumstances that have prevented you from submitting your work in the course, please discuss this with the instructor before you withdraw; if you present a good case, at the instructor's discretion you may be granted an extension to complete the course (see above).

- ◆ **Not Attending:** If you stop attending class, at the instructor's discretion you may be assigned a grade of "NA" (not attending). This has the same transcript effect as a failing grade of "E". This grade *does* apply toward your GPA, no credit is awarded for the course, and **payment is still required for the course**. If you stop attending but the instructor for the course determines that you have participated substantively in the course, you may still receive a failing grade of "E".
- ◆ **Extra Credit:** If a faculty member desires to allow you to earn extra credit in a course, the extra credit must be applied to your grade after the final grade calculations for the term have been made. This is to prevent extra credit points from "skewing the curve" or otherwise penalizing students who elected not to do the extra credit assignment(s). Policies for awarding of extra credit should be explicitly stated in the course syllabus. *If there is no policy for extra credit in the syllabus you should not expect an instructor to grant extra credit.*
- ◆ **Retention of Graded Examinations:** Faculty members may elect to retain your examinations after they have been submitted and graded, or they may return them to you, but in all cases they must allow you an opportunity to review your graded examination upon request. If faculty members elect to retain graded examinations, they must then retain them for three years following the completion of the course. See the discussion on Student Intellectual Property below for a discussion of other retention of coursework.

Classroom Conduct

You must conduct yourself in a professional manner showing courtesy to the instructor & your fellow students.

- ◆ Professional conduct includes participation in group activities and discussions. Making an active, positive contribution may help a class participation grade and will improve not only your experience, but also the experience of the entire group.
- ◆ Unless required to accommodate a student disability, please turn off cell phone ringers and other distracting electronic devices and leave them off while class is in session.
- ◆ You may use voice recording devices as long as their use does not disrupt class proceedings.
- ◆ If you are late to class, please enter the classroom and take a seat as quietly as possible
- ◆ You should not engage in conversations while an instructor, lecturer, or fellow student is speaking.
- ◆ If a class exceeds seventy-five minutes, there will generally be a break in the middle of each meeting of the class; please return from the break promptly and be in your seat at the appointed time.
- ◆ Please use restraint and good judgment when bringing food and drink items into the classroom.

Course Evaluations

Your evaluations of our courses are considered to be a critical component in the continuous improvement of our program offerings. Course evaluation results are reviewed by senior academic administration as well as the degree program director as just one component of the normal administrative review of instructor performance. The evaluation data and comments will also be available for review by each instructor (after grades have been submitted) to help improve the course. Evaluations are completely anonymous and confidential; evaluation results and comments are available to the instructor only without identifying information.

- ◆ **Submission of ITM course evaluations:** You will receive an email message in the last four weeks of each semester with login procedures and directions for completing course evaluations online. Course evaluations are made available under your Academics tab in the myIIT portal. Evaluations are conducted the last two weeks prior to the exam week of each academic semester, and you won't be able to access evaluations after Sunday night prior to exams. Constructive feedback from you is **very** important to us, both positive and negative, and your submission will be completely anonymous and confidential. **Please** complete your evaluations to help us improve our program; they really are important to us.

Student Intellectual Property

As a general rule, intellectual property created and submitted in fulfillment of assignments in the Information Technology and Management degree remains the intellectual property of the student; if no license is included, the assignments are copyrighted under the provisions of the Berne Copyright Convention and distribution is subject to ordinary international and national copyright law. This means that there may be no redistribution or re-use of the material submitted in fulfillment of assignments without the express consent of the copyright owner—the student. Because it is necessary to maintain files of student work for normal administrative and pedagogical purposes, such as accreditation requirements, the School of Applied Technology asserts a right to retain possession of student work, but retention of student work for these purposes is not an assertion of ownership. IIT owns the answers and questions on tests and examinations, unless otherwise indicated by the course instructor. There are too many possible variations on how intellectual property may be handled for full inclusion here, but in general the following policies will apply.

- ◆ **Requests for Assignments of Rights:** As many student projects are ongoing from term to term, and since faculty members would like to be able to present examples of superior student work, faculty members may request an assignment of rights for re-use or redistribution of student work from students, but students are not expected or required to assign any rights, and the refusal to assign rights may not be prejudicial to the student in any way. To ensure any consent granted for re-use or redistribution of any student work is clearly unequivocal, such rights must be granted in writing by the copyright owner. Suggested formats for assignments of rights may be found at <http://www.itm.iit.edu/resources/licensing.php>.

- ◆ *Software Licensing:* While it is not required, students are strongly encouraged to license academic programming assignments under an applicable Open Source license. This is in line with the academic traditions of openness and sharing that have created Linux and the Internet. The preferred license for ITM student use is the MIT License. Alternative licenses could be the GNU General Public License (GPL) or any one of a variety of other Open Source licenses. Suggested formats for software licensing may be found at <http://www.itm.iit.edu/resources/licensing.php>.
- ◆ *Other Intellectual Property Licensing:* Again, while not required, students are strongly encouraged to license research papers and other academic coursework under licenses that allow sharing of the material such as a Creative Commons license. With a Creative Commons license, you keep your copyright but allow people to copy and distribute your work provided they give you credit—and only under specific conditions that you specify. For detail on licensing under Creative Commons, see <http://creativecommons.org/license/>.
- ◆ *Public Domain:* Students may explicitly place any coursework in the public domain by placing a comment in their code or text that reads: **This <software/text/etc.> is placed in the Public Domain by the author, <student name>, <date>.**

Specializations

The Master of Information Technology and Management offers eleven specializations intended to prepare you for particular roles in the IT working world. There is no requirement that you complete a specialization; instead you can elect to tailor a course of study that meets your specific needs, and there is even a “General Course of Study” for those who would like a Master’s degree with a broad overview of information technology. If you do elect to complete a specialization, you must complete a sequence of courses within the specialization as outlined in the Graduate Bulletin. See pages 18-20 for a summary of the MITM specializations. Note that courses in the “Recommended” section are actually required—we didn’t select the wording of this; we would have *said* “required”. Your adviser will ultimately determine if you have completed a specialization and will also authorize any substitution of courses. Completion of a specialization should be indicated by an annotation on your transcript and may be recognized by a document issued by the School of Applied Technology.

Advising

Each student enrolled in our program is assigned an academic adviser. Your adviser assists you in monitoring progress toward graduation by fulfilling degree requirements, and helps you select courses and plan a program of study that will meet your individual goals and career objectives. Advisers are full-time ITM faculty or staff members. Limited advising duties may also be performed by academic counselors employed by the School of Applied Technology. You cannot enroll in courses in your first semester until you have met with your adviser and received your Alternate PIN; in subsequent terms your Alternate PIN will be listed under your Academics tab in the MyIIT portal.

- ↪ *Prerequisite and Core Courses:* Your adviser will determine if any of the prerequisite or core courses may be waived, based on your placement exam and/or your previous studies, certifications, and industry experience. If any one or two cores courses is/are waived, you must still complete nine hours of core course content. Core courses that are recommended courses in a specialization will still fulfill the core course requirement. All core courses are waived if you have previously completed IIT’s Bachelor of Information Technology and Management degree or are a co-terminal degree student.
- ↪ *Graduate Program of Study (401 form):* Your adviser will assist you in planning your Graduate Program of Study. You must submit a POS form, the 401 form, before the completion of 9 credit hours of courses. Your program of study must include your core courses. Typically the graduate college will automatically put a 401 form registration hold on first-semester students before the week of early registration. You must complete and file the online 401 form on the Graduate College website at <http://gradweb.iit.edu/eforms2/>. Your adviser will either approve your form and forward it to the ITM Department Chair for approval, or return it to you for correction.
 - ✓ *Specializations on the 401:* On the 401 form there is an option to select a concentration, which is the same as what the Graduate Bulletin calls a “specialization”. The most common cause of rejection for a 401 is a form with a concentration with courses that do not fulfill the requirements of the specialization; the Graduate College is very inflexible on this. You must include all recommended courses from your specialization as well as the required number of hours of specified electives from the specialization. Your adviser will determine allowable course substitutions for the specialization and will assist you in how to indicate these course substitutions on your 401 form. If you do not fulfill the requirements of the specialization as indicated in the bulletin or indicate appropriate substitutions, your form will be rejected by the Graduate College.
 - ✓ *Change to the Graduate Program of Study (406 form):* To change your course of study you will need to file a Change to the Graduate Program of Study form, the 406 form; the form location and approval process is the same as for the 401 form. **There is no reason** to file a 406 form until the beginning of your final semester of graduate study. If you believe that you have completed the requirements for a specialization, please consult with your adviser before indicating a concentration on the 406 form. Your adviser will determine allowable course substitutions for the concentration and will assist you in how to indicate these course substitutions on your 406 form. If you do not fulfill the requirements of the specialization as indicated in the bulletin or indicate appropriate substitutions, your form will be rejected by the Graduate College.
- ↪ *Graduate adviser Assignments:* Graduate students are assigned to an adviser by the ITM Departmental Coordinator, Amber Chatellier (achatell@iit.edu/312.567.5277.) She will assign an adviser based on the student’s indicated interest in a specialization based on their personal statement in their application. These assignments are generally as follows:

<i>Computer & Information Security:</i>	Bill Lidinsky	– lidinsky@iit.edu	or 630.682.6028
<i>IT Management & Entrepreneurship:</i>	Bob Carlson	– carlson@iit.edu	or 630.682.6002
<i>Voice & Data Communication Technology:</i>	Carol Davids	– davids@iit.edu	or 630.682.6024
<i>Data Management:</i>	Bob Hendry	– hendry@iit.edu	
<i>Web Development & Electronic Commerce:</i>	Madeleine England	– mengland@iit.edu	or 312.567.5291
<i>Software Development:</i>	Jeremy Hajek	– hajek@iit.edu	or 630.666.1961
<i>Systems Administration:</i>	Louis McHugh	– hlmchugh@iit.edu	or 630.682-6040
<i>Data Center Operations and Management:</i>	Ray Trygstad	– trygstad@iit.edu	or 630.447.9009
<i>Systems Analysis:</i>	Ray Trygstad	– trygstad@iit.edu	or 630.447.9009
<i>Management Information Systems:</i>	Louis McHugh	– hlmchugh@iit.edu	or 630.682-6040
<i>Digital Systems Technology:</i>	Jeremy Hajek	– hajek@iit.edu	or 630.666.1961
<i>Graduates of the ITM Bachelor's Program:</i>	Amber Chatellier	– trygstad@iit.edu	or 630.447.9009
<i>Co-Terminal Degree Students:</i>	Amber Chatellier	– achatell@iit.edu	or 312.567.5277
<i>Not Specified or General Course of Study:</i>	Amber Chatellier or any full-time ITM faculty member		

☞ *Program Approvals:* You must have your adviser's specific approval in each semester in order to:

- ✓ Register for a course from another college or department within the university
- ✓ Register for an Interprofessional Project (IPRO) course
- ✓ Register for more than 15 hours
- ✓ Register for any course for which a prerequisite is waived
- ✓ Engage in Curricular Practical Training (CPT – internships for International Students)

Advising Notes

- ◆ For planning purposes, the following courses are normally offered only in the term indicated (however this is subject to change without notice):
 - ☞ Fall: ITMS 548; due to lab requirements, this course is currently only offered at the Rice Campus. We do provide free bus transportation from the Main Campus for this course (see below).
 - ☞ Fall: ITMD 422, ITMD 515, ITMO 517, ITMS 528, ITMT 531, ITMD 532, ITMT 535, ITMO 544, ITMD 562, ITMD 563, ITMM 572
 - ☞ Spring: ITMS 512, ITMD 526, ITMD 527, ITMD 529, ITMD 534, ITMS 538, ITMO 541, ITMS 543, ITMS 549, ITMO 554, ITMS 558, ITMD 564, ITMD 565, ITMD 566, ITMM 573, ITMM 576, ITMS 588
- ◆ *Overloading:* Graduate students may register for a maximum of 15 credit hours per semester. To register for more than 15 credit hours, you must request permission to overload by submitting a G701 form to the Office of Graduate Academic Affairs via your Adviser (http://www.iit.edu/graduate_college/academic_affairs/pdfs/701_petition.pdf).
- ◆ *Registration Holds:* Advisers **cannot** remove any registration holds, but they can tell you who placed the hold and who to contact to have it lifted.
- ◆ *Co-Terminal Degrees:* For information on co-terminal degree student advising, please see the *ITM Undergraduate Student Handbook*.
- ◆ Things you should always remember when dealing with your adviser:
 - ☞ *Tell Us Who You Are:* Always include both your name and your *Student ID Number* when communicating with your adviser by email. This should help you get a quicker response and will certainly make their job easier. Many email addresses are pretty obscure and we have no idea of who whangdoodle387@yahoo.com is. Also, please remember that you are required to use your iit.edu email to communicate with us officially. If you forward your IIT email to Gmail or Hotmail or Yahoo, set up a "send as" in your account to send email from your iit.edu address. You are studying to be an IT professional; you should be able to figure out how to do this.
 - ☞ *Give Us Some Time:* When you contact your adviser, they will try to respond to you within 24 hours if possible, but they have 48 hours (2 days) to respond. You are *very* important to us as a student, but please remember that your adviser may have as many as 200 other students they are advising, may be teaching three classes, and often has administrative responsibilities over and above their academic duties. Please be patient!
 - ☞ *Keep It Together:* If you have multiple issues to discuss with your adviser, do it all at once! Ten emails or visits on ten different questions or topics is going to make your adviser's job much harder than it needs to be, and will probably annoy them after about the fourth or fifth contact. Please cover all of your current issues and/or questions in a single email or visit.
 - ☞ *We Are Not Your Mother:* You are a graduate student. You are responsible for making your own decisions about what you will study based on your own career aspirations and interests. It is NOT your adviser's job to tell you what courses to take. *Adviser* means we will give you *advice* based on what you tell us about what you would like to accomplish in your graduate studies and we are happy to do this, but really, don't expect us to tell you what to take. And by the way, don't ask us sign any form that you have not filled out completely!
 - ☞ *Applying for Graduation:* You will not graduate from IIT until you apply for graduation. You should apply in the first two weeks of the final semester of graduate study; the actual deadline for each term is published in the academic calendar for the term. At the same time you apply for graduation you should complete a Change to the Graduate Program of Study form (406 form); see above for detail on that. Instructions on how to apply for graduation are at http://www.iit.edu/graduate_college/faq/pdfs/how_to_apply_graduation.pdf.

Interprofessional Projects (IPROs)

Our Interprofessional Projects are core to what makes an IIT undergraduate education unique. An IPRO course is a team-based learning environment in which students from various concentrations and disciplines work together

to solve a real-world problem. These courses are an IIT undergraduate general education requirement, and all undergraduates must complete at least two three-credit-hour IPRO project courses. Graduate students may enroll in IPROs to provide leadership and oversight, and with adviser approval you will receive elective credit toward your degree. See <http://ipro.iit.edu/> for full details on IPROs.

- ◆ *IPRO Project Managers:* Graduate students enrolled in IPROs often are assigned the role of Project Manager. This is an excellent opportunity for graduate students who do not have real-world work experience to gain hands-on, real-life project management experience. We do recommend graduate student enrollment in IPROs on a case-by-case basis. If you are interested in an IPRO, please discuss it with your adviser.

Independent Study

You may request independent study with a faculty member for subjects not covered in courses offerings. The faculty member will issue a permit to register for ITMT 597, Special Problems in Information Technology, for between one and six hours of study as applicable. Full-time faculty may schedule students for ITMT 597 as the faculty member's schedule allows. Adjunct faculty are under no obligation to conduct independent study with students as they receive no additional compensation for this, so their participation is entirely voluntary. You can expect that all faculty members will request a written research prospectus or abstract of material to be studied before they issue you a permit to register.

Recognition of Academic Achievement

GAMMA NU ETA (GNH): ITM graduate students who have completed fifteen semester hours of study with a GPA of 3.8 or greater *and* who are in the top 15% of their class may be elected to the Beta Chapter of the National Information Technology Honor Society, GAMMA NU ETA (GNH). Membership is based on three primary criteria: academic excellence, community service activities, and leadership in the field of Information Technology. The voting members of the chapter are responsible for selecting candidates for induction each semester. Candidates will be notified of their election with an invitation to pledge at the beginning of each term. Inducted members receive a pin and a certificate. Students who continue their membership and active participation in the chapter are recognized with honor ropes and/or stoles in the Society's colors to be worn with the cap and gown at commencement. For more information on Gamma Nu Eta, see the Beta Chapter website at <http://www.itm.iit.edu/gammanueta/>.

ITM Student Organizations

GAMMA NU ETA (GNH): See "Recognition of Academic Achievement" above.

Information Technology and Management Organization (ITMO): The purpose of ITMO is to increase recognition for the ITM Major by making resources available for all ITM students. ITMO members organize, promote, and manage this organization to assist their peers in the ITM Department. ITMO also holds events, fundraisers, socials, and other functions; they also do community work and invite guest speakers. ITMO wants to serve as an umbrella for multiple partnerships, affiliations, and organizations that members will have options to join. For more details see the ITMO website at <http://www.iit.edu/~itmo> and on Facebook at <http://www.facebook.com/IIT.ITMO>.

Association for Information Technology Professionals (AITP): The IIT School of Applied Technology is an Enterprise Member of AITP and together with the AITP Chicago Chapter we are organizing an AITP student chapter at IIT this fall. Students who expressed an interest in the previous academic year will have an opportunity to join AITP with membership fees subsidized by the School of Applied Technology, and there may be additional subsidized memberships available to other prospective members. Watch the ITM Blog and email for announcements of AITP student chapter meetings. For more information, contact Ray Trygstad, trygstad@iit.edu or 630.447.9009.

Funding: Scholarships, Internships, Coops, Job Placement and Student Employment

Scholarships: Graduate students can apply for a limited number of merit scholarships as part of the admission process. These are quite competitive; students wishing to be considered should apply by February 15 for the next academic year. If there are scholarship funds left, they may be awarded to later applicants, including those starting in the spring term. However, students need to recognize that funds are limited and they are not likely to receive funding later than July.

Internships, Coops, and Job Placement: The IIT Career Management Center (<http://www.cmc.iit.edu/>) is the organization in the university that supports and facilitates student internships, cooperative education (coops) and job placement efforts. Please see their Web site for full details and descriptions of how to use services they offer.

- ◆ *Direct Offers to ITM Students:* Occasionally the ITM Department will receive direct solicitations for internships, coops and employment. These may be posted on the Jobs board at the Rice Campus and will normally be sent to all ITM students via email. In the case of internships and coops, even if a direct solicitation is received, all arrangements for the internship or coop must be made via the IIT Career Management Center. This includes OPT and CPT for international students.
- ◆ *Other Opportunities for Employment:* The opportunity to present at workshops, conferences and student colloquiums sponsored by the School of Applied Technology has proven to be fertile ground for employment for many ITM students. At any of these events, there may be (and usually are!) prospective employers evaluating students as they present results of their research and projects. Students have received direct job offers as a result of the quality of their participation in these events; in some cases offers have been made immediately following the conclusion of the student's presentation. Direct job offers are also solicited from faculty and staff members of ITM and are usually emailed to students directly. Occasionally, employers ask faculty members to select students to apply for jobs, and those requests are forwarded to faculty members exclusively.

ITM Department Student Employment: The following student employment positions in the School of Applied Technology and the ITM Department are available to ITM Graduate students:

- ◆ **Teaching Assistanceship:** This is a 20 hour/week position, reporting to one or more faculty members to grade student-submitted course materials and in some instances to support curriculum-specific laboratories. Teaching Assistants (TAs) must apply every term and may or may not be appointed each term. TAs normally receive a stipend, which is paid monthly, and tuition for three credit hours each semester of appointment. Full-time faculty members will nominate their preferred candidates for their Teaching Assistanceships so the most reliable path is to make a positive impression on a professor in class so that they will request you as a TA. Some faculty members require their TA to have completed all courses they are teaching that term with a minimum grade of 'A'. Students should understand that if you have not been offered a teaching assistanceship by the department, appointments as a TA without a specific faculty request are rare. Students desiring to serve as a Teaching Assistant must submit a resume to the ITM Departmental Coordinator, Amber Chatellier, PH 223, achatell@iit.edu, 312.567.5277.
- ◆ **Administrative Staff Member:** Students in these positions perform administrative tasks in the Rice Campus main office or the School of Applied Technology office in Perlstein Hall at the Main Campus and are paid hourly up to 20 hours/week. Students should apply for these positions by delivering a resume to:
 - ✉ **Rice Campus:** Rice Campus Office Manager - Cathy Foss, RC 136, cfoss1@iit.edu, 630.682.6008
 - ✉ **Main Campus:** SAT Director of Student Services and Academic Affairs - Madeleine England, PH 223, mengland@iit.edu, 312.567.5291
- ◆ **Technical Staff Member:** Students in these positions perform information technology tasks in the School of Applied Technology for Rice Campus technology support, Main Campus technology support and School of Applied Technology infrastructure support and are paid hourly up to 20 hours/week. Students should apply for these positions by delivering a resume to:
 - ✉ **Rice Campus:** Computer Systems Manager - Louis McHugh, RC 136, lmchugh@iit.edu
 - ✉ **Main Campus:** Computer Systems Manager - Don Monte, TS 2034, dmonte@iit.edu
 - ✉ **School of Applied Technology Infrastructure:** Systems Architect - Jeremy Hajek, RC 228, hajek@iit.edu

Campus-Wide Identification (CWID) and Unified-ID (UID)

Each student is assigned an 9-digit Campus-Wide Identification Number or CWID; it's also frequently referred to as your Student ID Number or A#. (Each IIT Faculty and Staff member is assigned a CWID as well). Graduate students received this number in your acceptance letter from the Information Technology & Management Degree program. You will also be assigned a Unified-ID (UID), which is used to log into MyIIT and is also your email username. It is generally the first letter of your first name followed by the first seven letters of your surname. If there are other students with the same letter combination, your UID may have a number appended to the end as well. If a student's entire name is less than eight letters, then their UID will be less than eight letters. **When emailing advisers or faculty always include your CWID (A#).**

MyIIT

MyIIT (<http://my.iit.edu/>) gives you access to online services for IIT students, including email, class registration, online course access via Blackboard, University announcements, IIT Today, and student news and events. The initial password for MyIIT is your birth month and year in MMY format followed by the last four digits of your CWID number. For example, if you were born on July 4th, and your CWID is A2005678, your initial MyIIT password would be 07045678. You can look up both your Unified-ID and your email address by looking yourself up in the IIT People Search at <http://www.iit.edu/people/search/>. For more information on MyIIT, see the "Training and Support" tab at <http://my.iit.edu/>.

Online Student Services

Almost every function of IIT student services is available online through MyIIT; most are found under the Academics tab, which accommodates four channels:

- ◆ **Academic Profile:** *The place to view your basic academic profile, primary advisor and use quick links to view your unofficial transcript and holds.*
- ◆ **Registration Tools:** *Provides quick links to look up your class schedule and add or drop classes.*
- ◆ **Banner Self-Service:** *Allows you to navigate through all areas of Banner Self Service including student records, financial aid and personal information forms where you can update addresses and other info.*
- ◆ **Student Grades:** *Use this quick link to view your grades.*

Graduate students will receive their Alternate PIN number from the Graduate College prior to the opening of registration for the next term; this number is required to register. If you are having difficulty registering, please contact the Registrar's office at registrar@iit.edu.

Electronic Mail

The primary method for university-to-student communication is through your IIT email. An email account is automatically set up for you when you are admitted. Your email username is the same as your UID, and this email username, when followed by "@hawk.iit.edu", makes up your email address at IIT. Email service is IIT Gmail provided through Google Apps for Education, available through Web access at MyIIT or by using a client program such as Outlook Express, Thunderbird, Windows Mail or Eudora. Your email password for client programs is the same as your MyIIT login. It is very important that you either check your IIT student email regularly or forward your student email account to your primary email address. To learn how to forward IIT email and change your IIT email contact address, please see the IIT Student Accounts FAQ at http://my.iit.edu/iit/ots/how_to/faq1.shtml. (You must already be logged into MyIIT to use this link.) **When emailing advisers or faculty always include your CWID (A#).**

Online Courses

All faculty and students are provided with accounts on IIT Blackboard, IIT's online learning support system. Online resources for all IIT courses are normally available through Blackboard, and online course lecture content is always on Blackboard. Login by clicking the Blackboard icon at the top of the screen in MyIIT. Once you access the system, you should see a welcome page that lists your courses for the current semester. Click on the appropriate link to access course materials. To learn more about using Blackboard, please see the Blackboard Student Manual which is located under "My Courses" on the initial Blackboard screen. Please direct Blackboard problems to the OTS Support Desk at 312.567.DESK (3375); *ITM instructors and ITM staff cannot help with Blackboard problems.*

Online Course Policies

Most non-laboratory courses in our programs are offered on the Internet via IIT Online. Online course lectures can be accessed via Blackboard. Online course content is available to all students registered for the course, including those students in the live classroom sections of the course.

- ◆ *Online Course Policies for International Students on F1 Visas:*
 - ☞ Only one online course may be taken per semester unless you are on an internship/Curricula Practical Training (CPT). This is a U.S. Government requirement and cannot be waived.
 - ☞ In their first semester in the program, F1 Visa students living on Main Campus cannot enroll in online sections of any course. This is intended to engage the student in the learning process so that they are not distracted from their studies.
- ◆ *Online Course Policies for Students Enrolled in Live Sections:*
 - ☞ For students in live sections, actual classroom attendance is expected and online content may not serve as a substitute for live classroom attendance. Students in live sections who do not attend class may be penalized in the class participation component of their course grade.
 - ☞ If a course has an online component, live students who miss a class session due to illness or other authorized absence are expected to view the lecture they have missed online.
- ◆ *Online Course Policies for All Students:*
 - ☞ Graduate students living outside the Chicago area who are taking their degree program as a distance learner are not required to take live courses.
 - ☞ Students living outside the Chicago area who have shown that they are successful students and thus qualify to be on an internship or cooperative may take one or more courses online.
 - ☞ Online students are responsible for all assignments announced in class. Failure to watch the lecture is never an acceptable excuse for failure to submit assignments on the due date.
 - ☞ Some students fail to keep up with the on-line lectures and only skim over the material. As a result they miss critical information and fail to hand in assignments on time because they are not prepared when the assignment is due. Often they try to review all the lectures at the last moment to prepare themselves for an assignment, with bad results. Live students sometime use the Blackboard facilities as a substitute for attending class regularly, thus depriving themselves of the best option available to them, which is the live class. As a result, instructors may require that no more than the last three lectures be available at any point in the semester, which will force students to stay on schedule with lectures and course assignments. If this is the class policy, instructors may have all lectures made available online two weeks prior to the final exam for review purposes.

Computers and Computer Labs

Computer accounts and laboratories are essential to our academic programs. Computer labs for use by ITM/IT students are provided by the Rice Campus, the School of Applied Technology and by IIT's Office of Technology Services. Portal and email accounts are provided for students and faculty by IIT's Office of Technology Services located on our Main Campus. **The ITM Department does not issue any computers to students.**

- ◆ *Rice Campus Computer Labs:* The labs are managed by the Johannesen Computer Center, Rice Campus room 208, and include Rice Campus rooms 207, 208, 210, 244, 247, 249, 250, 255 and 256. Room 250 is a network, security & forensics lab which is normally physically isolated from the rest of the campus network, room 255 is a specialized digital real-time communications lab, and room 256 is a wireless data communications lab. Rice Campus also provides an 802.11g/n wireless network for student and faculty use. Problems or issues with Rice Campus computing facilities should be reported via an email trouble ticket to appliedtech@iit.edu.
- ◆ *Main Campus Computer Labs:* The School of Applied Technology provides computer labs at 3424 South State Street, on the second floor of the South Tower and on the ninth floor of the IIT Tower, managed by the Johannesen Computer Center. OTS also provides an 802.11g/n wireless network for student and faculty use.
- ◆ *Information Technology (IT) / Information Technology & Management (ITM) Servers and Server Accounts:* Additional server accounts may be provided for ITM/IT students and faculty and dedicated servers may be provided to support specific courses; details of these accounts and servers are available from Jeremy Hajek (Rice Campus room 228 or hajek@iit.edu). Problems or issues with ITM servers should be reported via an email trouble ticket to appliedtech@iit.edu.
 - ☞ *Project Support:* Computers may be requested by faculty members to support student projects; such requests should be made as soon as the need is recognized. Servers will be virtual servers unless there is a compelling reason why that will not work. Virtual servers in standard configurations may be provided on a next-day basis; custom configurations are normally provided in two days but may take up to a week to provision. It may take up to a week to provide physical computers and providing these computers is completely dependent on the availability of resources.

- ◆ *Student Computer Ownership and Use:* You are not required but are strongly urged to acquire a notebook computer with both wired and wireless network access for use in our programs; details of the minimum and desired configurations may be found in the latest *Information Technology & Management Student Notebook Computer Specification* on page 17 of this handbook.
- ◆ *IIT Office of Technology Services Accounts:* OTS (<http://www.iit.edu/ots/>) provides common computer accounts for IIT faculty, staff and students; these accounts include MyIIT, Blackboard, Email/Google Apps, and Web accounts. IIT does not provide remote dial-up network access.

Software Available for ITM/IT Students

- ◆ *Microsoft Software:* The School of Applied Technology is a member of the Microsoft IT Academy (MSITA). As a member, we can provide Microsoft DreamSpark Premium (formerly MDSNAA) developer software under terms of the licensing agreement which permits academic use of these files by faculty and students as per the Subscription Agreement found at <https://www.dreamspark.com/licensing/Premium-EULA.aspx/>. The files include all current Microsoft operating systems, servers, and application development tools, and include applications such as Windows 7, Windows 8, and Visual Studio.Net. Our subscription does not include any Microsoft Office tools except Visio, Project, Outlook, One Note and Access. You can download Microsoft software from your Microsoft DreamSpark Premium Software Center account; these accounts are normally established at the beginning of the third week of the Fall and Spring semesters, and the second week for the Summer semester. You will receive an email from the Program Coordinator discussing the program and a separate email from Kivuto Solutions with your login information including your password. Product keys for this software are provided at the time of download so we suggest that you save a copy of this page. Information about Microsoft DreamSpark Premium membership benefits and other privileges may be found at <https://www.dreamspark.com/institution/subscription.aspx>.
- ◆ *VMware:* Software available to students and faculty through the VMWare Academic Program can be downloaded through your VMware ELearning account, which like DreamSpark is managed by Kivuto Solutions. Software under this program is available from the same server as your Microsoft DreamSpark products. This account will give you access to VMware products—for free—as well as a token allowing you to enroll in VMware eLearning Courses online. You are entitled to one free copy of each product, with licenses good for 1 year. Unlike the DreamSpark account, we CANNOT authorize *additional* downloads (i.e. more than one license) of these products, but according to the site you can redownload the software as necessary. More importantly, license keys are issued to you on the Web page at the time of download, and we cannot get you additional or replacement keys, so we suggest that you save a copy of any keys issued to you on the site.
- ◆ *Other ITM Software:* We provide links to a variety of freeware and shareware applications for Web development, multimedia, application development, and general office-type use.
- ◆ *IITapps:* This collection of open source, freeware and uncrippled shareware is updated each semester and is available at <http://www.itm.iit.edu/iitapps/>.
- ◆ *Using ISO Images:* For burning CDs, most computer lab PCs at the Rice Campus have recordable CD-drives as well as the necessary resources for creating CD-Rs; all you need is blank CD-Rs (not CD-RWs).
- ◆ *IIT Licensed Software:* Commercial software licensed for IIT use is available under the Training and Support tab in MyIIT and includes applications such as Virus Scan anti-virus products from McAfee, as well as PowerTerm and SecureCRT ssh clients/terminal emulators.

Writing Research Papers

Many students entering graduate education in the United States are not fully aware of what will be expected of them in the area of research and writing research papers. The ability to write cogently, concisely and clearly in an acceptable academic format and to present the results of your research orally are skills you must develop to be a success in our program. At the same time, you will be learning skills essential to success in your working life after graduation, as the ability to communicate clearly in written and spoken English is one the most important elements to success in business. Research projects and research papers are core elements of graduate education, and you will regularly be expected to submit research papers and project reports as you progress through our program. Here is some key advice to help you succeed.

- ◆ *Format of Research Papers:* Unless your professor gives you different instructions, you should prepare ITM research papers in the formats prescribed by the *Publication Manual of the American Psychological Association*, which are very common styles in use for scholarly publications and academic papers. Among other things, this means that you should submit your paper typed in 10, 11, or 12-point type (no larger than 12-point), double-spaced, with 1 inch margins on one side of 8½ inch by 11 inch paper. Quotations, figure captions and the list of references should all be double-spaced. Devote separate pages to each figure, each table and the list of references, and number all pages after the first. Attach a cover sheet listing the paper title and the name and email address of the author. If submitting electronically, please submit as a PDF file or in Rich Text Format. Most word processors can save as RTF. Your professor may prescribe specific required or acceptable electronic formats .
 - ↪ *Title:* Make your title short and specific. Preferably, titles should be five or six words long, never more than 10.
 - ↪ *Length:* Make papers as concise as possible; 15 to 20 pages should be reasonable for a graduate student research paper. Note that your professor may prescribe a different length expectation. Please count only pages containing body text; figures, tables, the abstract, references and bibliography do not toward the page total.
 - ↪ *Headings:* Please use only one level of heading.

☞ **Headers:** Despite what it appears to say in the APA guidelines, it is NOT necessary to place the words “Running Head:” in every page header; just put the abbreviated title of your paper in all uppercase letters (“all caps”). The phrase “Running Head” only appears on the first or title page of the paper.

☞ **Figures and Tables:** Please submit copies of any figures and tables on separate sheets of paper. They should have captions that are interesting, that are written in complete sentences, and that fully explain and interpret the exhibit without forcing the reader to refer to the text. Conversely, the reader should not have to refer back and forth from the text to the figures to understand the paper. You should refer to figures where appropriate with “(Figure 1),” but you should explain the meaning and implications of your data fully in the text. Do not require the reader to interpret the figure to understand what you have done, as in “Figure 1 shows the outcome of this survey.” Tables should list information in some obvious logical order.

☞ **References:** Cite references in the body of the text: “Thrupp (1998) quibbled that ...” or if 1998 was a prolific year for Thrupp, “(1998).” If the author is not cited in the text, then use (Thrupp 1998). Include all references cited in a bibliography. Alphabetize your bibliography by the name of the first author.

For articles use the form

Smith, James Q. (1978) Title of article. *Title of Journal or Periodical*, 10(5) 45-50.

and for books,

Toklas, Alice B. (1947) *Book title*. Publisher’s name, City, State (or Country).

and for collections of papers,

Beedle, Albert A. (1979) Title of chapter. J.J. Fox, ed. *Book title*. Publisher’s name, City, State (or Country), 556-572.

and for material online,

Bly, Laura (2000) Upstart airfare site beats the big boys. *USA Today.com*, April 21, retrieved on October 23, 2000 from (www.usatoday.com/life/travel/leisure/2000/tl227.htm).

The one exception APA style is that we would prefer you to italicize the titles of books, journals, periodicals and web sites rather than underlining as the APA style would require. Note also that the APA style requires indentation of the second lines of citations, and that only the first word of a book title should be capitalized unless subsequent words would otherwise be capitalized (i.e. proper nouns, etc.). Also, if there is no author given for online resources, cite the title.

☞ **Footnotes:** Avoid footnotes. If what they contain is important, it deserves a place in the text. If not, don’t distract the reader from what is important. If you really, really feel you have to have footnotes, we’ll live with them.

◆ **Writing Papers:** The following outline suggests an effective way of organizing a paper (it’s just a suggestion):

1. Describe the problem;
2. Discuss previous work in the field and any necessary background information
3. Explain what you did, how you did it, and what obstacles you encountered; or provide specific findings of fact that support your proposed solution or thesis;
4. State your solution or conclusion;
5. List the resulting benefits, both quantitative and qualitative; and
6. If applicable, provide an appendix giving the particulars of any models used or data collected during the research.

In writing your paper, explain your work so readers outside the field can understand it. If you must use a specialized term, abbreviation, or acronym, make sure you define it; write out an acronym or abbreviation the first time it appears and enclose it in parentheses immediately afterwards.

☞ Here is a possible step-by-step breakdown:

- Choose an area of interest to you to start your topic selection
- Search for publications—both in print and online—related to your topic
- Narrow your topic to refine your search results
- Formulate a thesis statement to guide your research
 - ✓ A good thesis statement is critical; it’s the answer to the question that your paper explores and clearly delineates the argument that will be presented in your paper (see the humorous but accurate explanation to the right →)
- Scan books to see if they are relevant
 - ✓ Use the Table of Contents & index to quickly locate useful information
 - ✓ The table of contents for many books is now available online at the publisher or on amazon.com
 - ✓ If you find a book you need at Border’s or Barnes & Nobles, go to our library and odds are that if they don’t have it that they can get it on interlibrary loan.
- Make notes on, or photocopy, interesting passages as you encounter them
- Make notes as you read to capture thoughts, questions, and ideas
- Refine your research question and do further information gathering
- Compose and write down your working thesis
- Review and reflect on work done in the field already; discuss any necessary background information
- Construct your argument, with the main points organized in an outline
- Write a rough draft, expanding the outline to fulfill paper length requirements
- Include quotes that support your points
- Revise your rough draft to ensure a strong, logical argument

Hulk trying to craft cogent thesis statement.

It tricky to condense entire argument into focused declarative phrase and still assert Hulk’s conclusions.



- Document *all* works referenced in the preparation of your paper with particular attention on works cited by creating a bibliography
 - ✓ Ensure all quotes and paraphrases are properly cited in the body of your paper
 - ✓ Ensure all sources cited are included in your bibliography
- Revise your paper for spelling, punctuation and grammar errors
- Print out the final revision of your paper and bibliography or save as PDF or RTF file as necessary
- ◆ **Use of Wikipedia:** While *Wikipedia* is a good starting point for research to get an overview and point you to available resources, you cannot cite or quote *Wikipedia* in an assignment in IIT's Information Technology & Management curriculum. *Wikipedia* is a wonderful resource, but due to its community-edited nature it is not acceptable as a source of material for use for academic writing.
- ◆ **Live, In-Person Help:**
 - ☞ **The IIT Writing Center** (http://www.iit.edu/csl/hum/resources/writing_center.shtml) exists only to HELP YOU WRITE YOUR PAPER. Typically, you will take a project or paper assignment to the center, where a tutor will work one-on-one with you to assist with the writing process. There are tutors there who are especially trained to work with students for whom English is a second language but they certainly will work with anyone. The Writing Center is in Siegel Hall rooms 232 and 233. Students may use sign-up sheets on the doors of SH 232 and 233 to reserve a specific time with a tutor. When possible, the Writing Center also accepts students on a walk-in basis without an appointment.
 - ☞ **IIT's Galvin Library** has Reference Librarians who are there specifically to assist you in your research and preparation of citations. If you have questions about preparation of citations, they are the experts and they are there to help. They also offer classes to help you learn how to best use library resources. Fall library courses for international students can be found at <http://galvinlibrary.wordpress.com/>. For Fall 2013, the last International student sessions will be on Friday, August 16, at 1pm in English and at 2:30pm 图书馆介绍 in Chinese, in the Library Learning Center (LLC) on the lower level of Galvin Library. International students can also see <http://guides.library.iit.edu/internationalstudents> which lists "Research Classes for International Students" which will be offered later in the fall term.
- ◆ **Additional Information:**
 - ☞ For a fine discussion of writing, read William Strunk Jr. and E.B. White's *The Elements of Style*, Allyn and Bacon, Needham Heights, MA.
 - ☞ For definitive guidance for preparation of a research paper in APA style, see the American Psychological Association's *Publication Manual of the American Psychological Association*, American Psychological Association, Washington D.C.
 - ☞ For a more complete, formal treatment of the process of preparing a paper for publication, see The University of Chicago Press *The Chicago Manual of Style*, University of Chicago Press, Chicago, IL.
 - ☞ For sound advice on figures, refer to the series of books by Edward R. Tufte: *The Visual Display of Quantitative Information*, *Envisioning Information*, and *Visual Explanations*, all from Graphics Press, Cheshire, CT. (Professor Trygstad took a seminar from from Tufte and was very impressed.)
- ◆ **Other very useful resources for preparing papers:**
 - ☞ The IIT Writing Center: http://www.iit.edu/csl/hum/resources/writing_center.shtml
 - ☞ *57 Tips for Writing Your Term Paper*: <http://www.degreetutor.com/library/online-assignments/termpaper-writing>
 - ☞ *50 Ways to Increase Your Chances for an "A" Research Paper*: <http://www.rasmussen.edu/articles/research-paper-strategies.asp>
 - ☞ *The Research Project Calculator*, from the Electronic Library for Minnesota: <https://rpc.elm4you.org/>
 - or *The Assignment Calculator* from The University of Minnesota: <https://www.lib.umn.edu/apps/ac/>
 - ☞ *Writing Tutorial Services pamphlets*, Indiana University: <http://www.indiana.edu/~wts/pamphlets.shtml>
 - ☞ *OWL at Purdue: The Online Writing Lab at Purdue University*: <http://owl.english.purdue.edu/owl/>
 - ☞ *LEO: Literacy Education Online*, St. Cloud State University: <http://leo.stcloudstate.edu/>
 - ☞ *APA Style* (includes tutorials on APA citation styles and bibliography entries): <http://www.apastyle.org/>
 - ☞ *Zotero* bibliographic software as an extension for Firefox or as a standalone program for Windows, Mac or Linux with hooks to Chrome or Safari: <http://www.zotero.org/>

How to Choose a Campus

Courses in our programs are offered at two locations:

The Daniel F. and Ada L. Rice Campus at 201 East Loop Road in Wheaton, Illinois

The IIT Main Campus along State Street between 31st and 35th Streets in Chicago, Illinois

- ◆ **Rice Campus advantages:**
 - ☞ The ITM Department is based at Rice Campus, and all administrative functions are handled at Rice.
 - ☞ Some lab classes are available only at Rice Campus.
 - ☞ Faculty are more accessible, enabling both research and projects, and a chance to get to know faculty one-on-one.
 - ☞ There are many opportunities to present oneself and one's work at seminars, workshops, & conferences.
 - ☞ There is easy access to labs and computers, including a VoIP lab, a security and forensics lab, and a multimedia lab, in addition to the general computer labs.
 - ☞ Virtually all on-campus job opportunities are IT jobs.
 - ☞ Public transportation via Metra commuter rail service makes it easy to get to Chicago.

- ◆ *Main Campus advantages:*
 - ☞ Dorms and meal plans are available.
 - ☞ Student organizations are more accessible.
 - ☞ There is more opportunity for interaction with fellow students.
 - ☞ More job opportunities exist, although there is also more competition.
 - ☞ All the activities of Chicago are at your fingertips.
- ◆ We attempt to make the advantages of both campuses available to all students as much as possible:
 - ☞ Most classes are offered at both campuses and on the Internet
 - ☞ We provide transportation for Main Campus students to you to take courses that are only offered at the Rice Campus.
 - ☞ We provide free bus service to and from the Main Campus to the main commuter train stations in Chicago.
- ◆ **Main Campus to Rice Campus IIT Bus Transportation:** For students living on Main Campus who must enroll in courses only offered at the Rice Campus, the School of Applied Technology provides an IIT-chartered bus. This bus will normally run each Monday and Wednesday, departing from the Main Campus at 12:45pm and departing from the Rice Campus to return to Main Campus at about 9:45pm. If you are coming for an afternoon class only, you can use the Pace bus 714 and Metra train service to return to Chicago earlier. Students planning to return to Main Campus on the IIT bus should sign the list on the Rice Campus Public Safety Officer's desk before 9pm; this is to ensure that the bus will not leave anyone behind. This service is free to all IIT students, faculty and staff; you may be requested to present your Hawkcard to verify this.
- ◆ **Main Campus to Rice Campus Public Transportation:** Main Campus students can take a train from the Ogilvie Transportation Center (commonly known as Northwestern Station) on the Metra Union Pacific West Line to Wheaton or College Avenue, and from Wheaton or College Avenue back to Chicago; or from Union Station on the Metra BNSF Line to Naperville, and from Naperville back to Chicago. Metra round-trip train fare to Wheaton/College Avenue is \$11.50. IIT provides regular scheduled bus service from the Main Campus to both of the main Metra stations. The Pace Bus system, which provides bus transportation for suburban Chicago, operates Pace Bus Route #714 from the Metra Stations at Wheaton, College Avenue and Naperville to the Rice Campus. Unfortunately your CTA U-Pass will not be accepted on Pace Buses, and the Pace Bus #714 to the Rice Campus only runs Monday through Friday, 6:30am to 6pm. Pace Bus fare is \$1.75.
 - ☞ Please note that bus and train schedules are subject to change without notice, and that IIT has no control and very little influence over Chicago Transit Authority, Metra or Pace transportation services.

IIT Shuttle Bus Schedule: <http://www.iit.edu/directory/shuttlebus.html>
Metrarail Union Pacific West Line (Wheaton): http://metrarail.com/Sched/cnw_w/cnw_w.shtml
Metrarail BNSF Line (Naperville): <http://metrarail.com/Sched/bn/bn.shtml>
Pace Bus Route # 714: http://www.pacebus.com/sub/schedules/route_detail.asp?RouteNo=714

Rice Campus Housing

Rice Campus does not have dormitories; however, there are a number of apartments within easy walking distance of the campus, as well as shopping and restaurants. In order to rent an apartment, students need proof of monetary resources. International students should obtain a Visa or MasterCard account prior to arriving in the US. If you would like further housing information for the Rice Campus, please contact Pamela Stella, Rice Campus Director of Corporate and Community Relations, at stella@iit.edu or 630.682.6013.

Personal Hygiene

Students in program at IIT come from all over the world and as everyone knows, social and cultural differences mean that we do things in many different ways. In much of the world, clean fresh water is something that is in very short supply and consequently standards of personal hygiene can vary greatly. And quite frankly, many domestic American students, once free of the critical eyes and noses of Mom and Dad, often lapse into unhygienic practices. In the interests of student harmony—and so we don't have to single anyone out to discuss the adverse effect of poor personal hygiene on people trying to sit next to you in class—here are normal expectations for personal hygiene in the United States, where clean fresh water is plentiful and is included with your dorm room fees or apartment rent.

- ◆ *Bathing:* Adults normally bathe or shower every day, washing with soap. Additional showering or bathing may be necessary after sports or other vigorous activities.
- ◆ *Deodorant:* Most adults in the U.S. use some form of underarm deodorant.
- ◆ *Perfumes and Colognes:* In many societies where it is not practical to bathe daily, unpleasant body odors are often masked with heavy applications of perfume or cologne. This should not be necessary with daily bathing, and may be not only offensive to others but may actually produce allergic reactions. This is not to say that they should not be used, but they should be used very lightly or sparingly at most.
- ◆ *Teeth:* Teeth should be brushed at least twice a day; many Americans brush after every meal. If you brush your teeth well (dentists recommend brushing for at least two minutes with toothpaste) this will handle most problems with bad breath, but some people will use a mouthwash as well.
- ◆ *Laundry:* Americans normally launder all undergarments and shirts, blouses, dresses or other upper body garments that come in direct contact with underarms after every wearing; in other words, these clothing items are normally worn for a day and then put into the laundry. Lower body garments (trousers, slacks, shorts, skirts, etc.) can be worn more than one day but certainly should be laundered anytime they are visibly soiled or there is a noticeable odor. Outer garments (coats, sweaters, etc.) are laundered or drycleaned anytime they are visibly soiled or there is a noticeable odor. This does not mean you must wash your laundry every day, but you certainly should do it whenever you have no clean upper body clothing items or undergarments.

Other Important Student Resources

- ◆ *ITM Loopback (ITM Department blog):* http://blogs.iit.edu/itm_loopback/
- ◆ *ITM Student Resource Page:* <http://www.itm.iit.edu/resources/studentresources.php>
- ◆ *ITM Resource Page:* <http://www.itm.iit.edu/resources/>
- ◆ *IIT Student Handbook:* http://www.iit.edu/student_affairs/handbook/
- ◆ *IIT Graduate Student Handbook:* http://www.iit.edu/graduate_college/pdfs/Graduate_Student_Handbook.pdf
- ◆ *IIT Graduate Bulletin:* <http://www.itm.iit.edu/data/graduatebulletin/>
- ◆ *Links to Free Software:* <http://www.itm.iit.edu/iitapps/>
- ◆ *Link to software provided under Microsoft DreamSpark Premium and the VMware Academic Program:*
<http://www.itm.iit.edu/dreamspark/>

Information Technology & Management Notebook PC Specifications

While we do not currently require students enrolled in the Information Technology & Management (ITM) degree program to own a notebook computer, it will certainly enhance your student experience to have one.

Standards below reflect specifications for notebook computers for use by ITM students; each category is broken down into recommended, minimum and, where applicable, optional specifications. Your system may run **any** operating system but must be able to run Microsoft Windows 7 Professional as the primary operating system or as a secondary (dual-boot) operating system or as a virtual machine using virtualization software. Please consider these specifications if you are purchasing a notebook computer for use in our program. If you have questions about these specifications, please contact Ray Trygstad, trygstad@iit.edu or 630.447.9009.

ITEM	RECOMMENDED	MINIMUM	OPTIONAL
Processor	Intel Core i5 Mobile AMD Turion II	Intel Core 2 Duo Mobile with VT AMD Athlon II	Intel Core i7 Mobile Intel Core i3 Mobile AMD Phenom II
◆ You may not be able to run virtualization software adequately without VT or AMD-V technology.			
RAM Memory	4GB or greater	1GB	8GB RAM is optimal to run Windows 7/8 & virtualization
◆ You may not be able to run all necessary applications with only 512 MB of RAM.			
◆ You may not be able to run virtualization software optimally with only 4 GB of RAM.			
Operating System	Microsoft Windows 7 Professional with XP mode	Microsoft Windows 7 Professional	Linux or Solaris Macintosh OS/X Windows 7 Ultimate Windows Server 2008/2012
◆ MacBooks must have BootCamp, Oracle VirtualBox, Parallels Desktop or Vmware Fusion installed allowing running of Microsoft operating systems. VirtualBox is available for free at http://www.virtualbox.org/ . VirtualBox is the recommended desktop virtualization solution in our program.			
◆ Linux or Solaris notebooks must have Oracle VirtualBox, Xen, KVM, or VMware Workstation installed allowing running of Microsoft operating systems. VirtualBox is available for free at http://www.virtualbox.org/ . VirtualBox is the recommended desktop virtualization solution in our program.			
◆ Microsoft, Linux & Solaris OS software is all available at no cost to all ITM students but you should purchase a system that will support Windows 7 Professional as a minimum standard.			
◆ Ubuntu and Ubuntu variants Linux Mint and Pinguy, OpenSUSE, and Fedora are recommended Linux distributions.			
◆ Window XP, Vista and 7 Home versions will not support all software or OS functions you may need in our curriculum.			
◆ Windows Vista in any version is not recommended.			
Hard Drive	120GB	80GB	
◆ 80GB minimum suggested for dual boot with Windows and Linux/Solaris or for use with Windows Virtual PC.			
Optical drive	24-48X CD-RW/DVD-RW	24x CD-RW/DVD-R	Blu-Ray
Floppy drive	Neither required or expected		3.5 inch 1.44MB
Graphics card	128MB or greater, 24-bit color	64MB 24-bit color	
Display resolution	1280x1024 XGA or greater	1024x768 SVGA	
Wireless Network	802.11g/n	802.11g	4G (Sprint & Clear in Chicago)
Network Port	1000Base-T ethernet	100Base-T ethernet	56K modem
◆ Virtually all notebook PCs sold today include a gigabit (1000Base-T) ethernet port as standard items.			
Peripheral Port	3 USB-2	1 USB-2	IEEE 1394 (FireWire) USB-3 eSATA
Office Software	LibreOffice	LibreOffice	Microsoft Office 2003 or greater
◆ LibreOffice is available for free at http://www.libreoffice.org/ .			
◆ A four-year student subscription to Microsoft Office 365 may be purchased by IIT students at http://www.microsoft.com/student/en-us/Products/MOOffice/default.aspx#fbid=8JFh8MYRao3			
Anti-Virus Software	including all current updates		Optional on Mac/Linux
◆ IIT provides a licensed version of McAfee VirusScan for use by for all students, faculty & staff; Microsoft Security Essentials—which is free from Microsoft—is also recommended.			
You may not operate any version of Microsoft Windows on IIT networks without installed anti-virus software.			

Students should have a flash/thumb drive for lab use; 2GB minimum is recommended.

See page 12 above for software available at no cost to ITM students.

Department of Information Technology and Management**Master of Information Technology & Management Specializations****Degree Core Courses (9 hours)****Required courses**

ITMD 411 Intermediate Software Development
AND 6 hours chosen from the following
 ITMD 421 Data Modeling and Applications
 ITMO 456 Introduction to Open Source Operating Systems
 ITMD 461 Internet Technologies & Web Design
 ITMD 540 Introduction to Data Networks and the Internet

Notes: Core courses may be waived upon presentation of evidence of equivalent coursework, certification or experience or successful completion of the placement examination. Approval of waivers will be made by the student's adviser or the ITM Associate Director. If one or two core courses are waived, students must still complete nine hours of core course content. Core courses that also apply to specializations will still fulfill the core course requirement.

Computer and Information Security (21 hours)**Recommended courses (12 hours)**

ITMO 456 Introduction to Open Source Operating Systems
 ITMS 548 Cyber Security Technologies
 ITMS 549 Cyber Security Technologies: Projects & Advanced Methods
 ITMS 578 Cyber Security Management

AND 3 or more hours chosen from the following:

Any 500-level ITMS elective
 ITMO 551 Distributed Workstation System Administration
OR
 ITMO 552 Client-Server System Administration
 ITMM 586 Information Technology Auditing

AND 6 hours chosen from the following:

Any 500-level ITMS elective
 (ITMS 579 may only be taken once as part of this requirement)

Voice and Data Communication Technology (21 hours)**Recommended courses (12 hours)**

ITMO 456 Introduction to Open Source Operating Systems
 ITMO 540 Introduction to Data Networks and the Internet
 ITMO 545 Telecommunications Technology
 ITMO 546 Voice Communications Over Data Networks

ITMO 547 Voice Communications Over Data Networks: Projects & Advanced Methods
 ITMS 548 Cyber Security Technologies
 ITMS 549 Cyber Security Technologies: Projects & Advanced Methods

AND 9 hours chosen from the following:

ITMO 541 Network Administration and Operations
 ITMO 542 Wireless Technologies and Applications
 ITMS 543 Vulnerability Analysis and Control
 ITMO 544 Cloud Computing Technologies

ITMO 555 Intelligent Device Applications
 ITMS 555 Mobile Device Forensics
 ITMD 565 Rich Internet Applications
 ITMM 571 Project Management for Information Technology Management
 ITMM 575 Networking & Telecommunications Management

IT Management and Entrepreneurship (18 hours)**Recommended courses (9 hours)**

ITMM 571 Project Management for Information Technology Management
 ITMM 574 Information Technology Management Frameworks
 ITMM 581 IT Entrepreneurship

ITMM 570 Fundamentals of Management for Technical Professionals
 ITMM 582 Business Innovation
 ITMS 578 Information Systems Security Management
 INTM 511 Industrial Leadership
 INTM 515 Advanced Project Management
 INTM 522 Computers in Industry
 INTM 534 Resource Management
 INTM 543 Purchasing
 TECH 581 Consulting for Technical Professionals

AND 9 hours chosen from the following:

Any 500-level ITMM elective
 ITMT 531 Object Oriented System Analysis, Modeling and Design
 ITMD 532 UML Based Software Development

Data Management (18 hours)**Recommended courses (9 hours)**

ITMD 421 Data Modeling and Applications
 ITMD 422 Advanced Database Management
 ITMD 528 Database Security

ITMD 527 Data Analytics
 ITMD 529 Advanced Data Analytics
 ITMT 531 Object Oriented System Analysis, Modeling and Design
 ITMO 557 Storage Technologies
 ITMM 574 Information Technology Management Frameworks
 ITMS 578 Cyber Security Management

AND 9 hours chosen from the following:

ITMD 521 Client Server Technologies & Applications
 ITMD 526 Data Warehousing

Data Center Operations and Management (21 hours)**Recommended courses (12 hours)**

ITMO 540 Introduction to Data Networks and the Internet
 ITMT 535 Data Center Architecture
 ITMO 554 Operating System Virtualization
 ITMM 576 Data Center Management

ITMO 544 Cloud Computing Technologies
 ITMO 546 Voice Communications Over Data Networks
 ITMS 548 Cyber Security Technologies
 ITMO 557 Storage Technologies
 ITMM 574 Information Technology Management Frameworks
 ITMS 578 Cyber Security Management
 ITMS 588 Incident Response, Disaster Recovery and Business Continuity

AND 9 hours chosen from the following:

ITMD 526 Data Warehousing

Master of Information Technology & Management Specializations

Web Design and Application Development (18 hours)**Recommended courses (9 hours)**

ITMD 461 Internet Technologies & Web Design
 ITMD 534 Human/Computer Interaction
 ITMD 562 Web Application Development

AND 9 hours chosen from the following:

ITMD 513 Open Source Programming
 ITMD 515 Advanced Software Development
 ITMD 519 Topics in Software Development
 ITMO 541 Network Administration and Operations

ITMD 555 Intelligent Device Applications
 ITMD 563 Intermediate Web Application Development
 ITMD 564 Advanced Web Application Development
 ITMD 565 Rich Internet Applications
 ITMD 566 Service-Oriented Architectures
 ITMD 569 Topics in Application Development
 ITMM 571 Project Management for Information
 Technology Management
 COM 525 Research and Usability Testing

Systems Analysis (18 hours)**Recommended courses (9 hours)**

ITMT 531 Object Oriented System Analysis, Modeling and
 Design
 ITMM 571 Project Management for Information Technology
 ITMM 572 Process Engineering for Information Technology
 Managers

AND 9 hours chosen from the following:

ITMD 511 Application Development Methodologies

ITMD 532 UML Based Software Development
 ITMD 534 Human Computer Interaction
 ITMD 536 Software Testing and Maintenance
 ITMM 574 Information Technology Management Frameworks
 ITMM 575 Networking and Telecommunications Management
 ITMS 578 Cyber Security Management
 ITMM 586 Information Technology Auditing
 INTM 522 Computers in Industry
 TECH 581 Consulting for Technical Professionals

Software Development (18 hours)**Recommended courses (9 hours)**

ITMD 515 Advanced Software Development
 ITMD 532 UML Based Software Development
 ITMM 571 Project Management for Information
 Technology Management

AND 9 hours chosen from the following:

ITMD 412 Advanced Structured and
 Object Oriented Programming
 ITMD 511 Application Development Methodologies
 ITMD 513 Open Source Programming

ITMS 518 Coding Security
 ITMD 519 Topics in Software Development
 ITMD 521 Client Server Technologies and Applications
 ITMT 531 Object Oriented System Analysis,
 Modeling and Design
 ITMD 534 Human Computer Interaction
 ITMD 536 Software Testing and Maintenance
 ITMO 555 Intelligent Device Applications
 ITMO 556 Intelligent Device Projects
 ITMM 572 Process Engineering for Information Technology
 Managers

System Administration (18 hours)**Recommended courses (9 hours)**

ITMO 541 Network Administration and Operations
 ITMO 551 Distributed Workstation System Administration
OR
 ITMO 552 Client-Server System Administration

AND 9 hours chosen from the following:

ITMO 456 Introduction to Open Source Operating Systems
 ITMO 544 Cloud Computing Technologies
 ITMO 554 Operating System Virtualization

ITMO 551 Distributed Workstation System Administration
OR
 ITMO 552 Client-Server System Administration
 ITMO 557 Storage Technologies
 ITMS 558 Operating System Security
 ITMM 571 Project Management for Information
 Technology Management
 ITMM 574 Information Technology Management Frameworks
 ITMM 575 Networking and Telecommunications Management

Management Information Systems (18 hours)**Recommended courses (9 hours)**

ITMD 421 Data Modeling and Applications
 ITMD 422 Advanced Database Management
 ITMD 571 Project Management for Information Technology

AND 9 hours chosen from the following:

ITMD 526 Data Warehousing
 ITMD 527 Data Analytics
 ITMD 528 Database Security
 ITMD 529 Advanced Data Analytics
 ITMT 531 Object Oriented Syst. Analysis, Modeling & Design

ITMD 532 UML Based Software Development
 ITMO 544 Cloud Computing Technologies
 ITMO 554 Operating System Virtualization
 ITMO 557 Storage Technologies
 ITMM 572 Process Engineering for Information Technology
 Managers
 ITMM 574 Information Technology Management Frameworks
 ITMM 586 Information Technology Auditing
 INTM 515 Advanced Project Management
 INTM 522 Computers in Industry
 TECH 581 Consulting for Technical Professionals

Digital Systems Technology (18 hours)**Recommended courses (9 hours)**

ITMT 533 Operating System Design Implementation
 ITMO 555 Intelligent Device Applications
 ITMT 593 Embedded Systems

AND 9 hours chosen from the following:

ITMT 492 Embedded Systems
 ITMD 511 Application Development Methodologies
 ITMO 540 Introduction to Data Networks and the Internet

ITMO 541 Network Administration and Operations
 ITMO 542 Wireless Technologies and Applications
 ITMO 544 Cloud Computing Technologies
 ITMO 545 Telecommunications Technology
 ITMO 546 Voice Communications Over Data Networks
 ITMO 556 Intelligent Device Projects
 ITMD 565 Rich Internet Applications
 INTM 522 Computers in Industry

Department of Information Technology and Management

Master of Information Technology & Management: General Course of Study

These are selected groupings of courses allowing students enrolled in the Master of Information Technology & Management degree to develop a broad overview knowledge of information technology. Suggested courses in each area are marked with an asterisk (*) with one or more alternative courses listed for each area; more alternatives may be possible at the discretion of the student's advisor.

Web Design and Application Development

- * ITMD 461 Internet Technologies & Web Design
- ITMD 562 Web Site Application Development
- ITMD 565 Rich Internet Applications

Data Management

- * ITMD 421 Data Modeling and Applications
- * ITMD 531 Object Oriented System Analysis, Modeling and Design
- ITMD 521 Client Server Technologies and Applications

Information Technology Management

- * ITMM 571 Project Management for Information Technology
- ITMM 574 Information Technology Management Frameworks
- ITMM 586 Information Technology Auditing

Networking and Communications

- * ITMO 540 Introduction to Data Networks and the Internet
- * ITMS 548 Cyber Security Technologies
- ITMO 541 Network Administration and Operations

Systems Administration

- * ITMO 551 Distributed Workstation System Administration
- OR**
- * ITMO 552 Client-Server System Administration

Software Development

- * ITMD 411 Intermediate Software Development
- ITMD 532 UML Based Software Development

Computer & Information Security

- * ITMS 578 Cyber Security Management
- ITMS 528 Database Security
- ITMS 548 Cyber Security Technologies

Master of Cyber Forensics and Security

30 credit hours (Courses may be selected from 400- and 500-level courses: a minimum of 18 credit hours must be at the 500-level or higher. Law courses count as 500-level courses toward this total.) GPA of 3.0/4.0 or better

Core Courses (15 hours)

Required courses

- ITMS 538 Cyber Forensics
- ITMS 543 Vulnerability Analysis and Control
- ITMS 548 Cyber Security Technologies
- ITMS 578 Cyber Security Management
- LAW 273 Evidence

Note: Core course requirements may be waived upon presentation of evidence of equivalent coursework, certification or experience. Approval of waivers will be made by the student's adviser or the ITM Associate Director.

Elective Courses (15 hours)

- Select at least twelve hours from the following:
- ITMS 518 Coding Security
 - ITMS 528 Database Security

- ITMS 539 Steganography
- ITMS 549 Cyber Security Technologies: Projects and Advanced Methods
- ITMS 555 Mobile Device Forensics
- ITMS 558 Operating System Security
- ITMS 579 Topics in Cyber Security
(May be taken more than once)
- ITMS 588 Incident Response, Disaster Recovery and Business Continuity
- ITMM 585 Legal and Ethical Issues in Information Technology
- ITMM 586 Information Technology Auditing
- ITMO 456 Introduction to Open Source Operating Systems
- ITMT 594 Special Projects in Information Technology

AND select at least three hours from the following:

- LAW 240 National Security Law
- LAW 478 Computer and Network Privacy and Security: Ethical, Legal, and Technical Considerations
- LAW 495 Electronic Discovery

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(On next page)

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Information Technology & Management (ITM) Faculty & Staff Directory

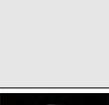
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