ABET
Self-Study Report
for the
Bachelor of Information Technology and Management
at
Illinois Institute of Technology
Chicago and Wheaton, Illinois

June 30, 2015

CONFIDENTIAL

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Program Self-Study Report for CAC of ABET Accreditation

BACKGROUND INFORMATION

A. Contact Information
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B. Program History
The Bachelor of Information Technology and Management was established as an undergraduate transfer program in fall of 2002. The first freshmen (four-year) students entered the program in fall of 2009. The program has never had an ABET review, although other computing and engineering curricula at the university are ABET accredited. One hundred and thirteen students have graduated from the program, and one hundred and thirty-eight students are currently enrolled.

C. Options
The Bachelor of Information Technology and Management offers seven optional specializations, plus the option to simultaneously complete a graduate degree in either of two formal co-terminal degree programs. Students are not required to complete a specialization. As these specializations are entirely optional they are not considered to be separate academic tracks. The seven specializations include:

**Data Management**
Focuses on the design, development and administration of traditional and Internet-based data management.
ITMD 422 Advanced Database Management
ITMS 428 Database Security
*AND select two courses from the following:*
ITMO 444 Cloud Computing Technologies
*OR any ITMD elective(s)*

**Networking and Communications**
Focuses on network applications and management.
ITMO 441 Network Applications and Operations
*AND select one course from the following:*
ITMO 433 Enterprise Server Administration
ITMO 453 Open Source Server Administration
*AND select any two courses from ITMO, ITMT, or the following:*
ITMD 465 Rich Internet Applications
ITMS 443 Vulnerability Analysis and Control
ITMS 478 Cyber Security Management

**IT Entrepreneurship and Management**
Focuses on managerial and entrepreneurial skills needed to launch a new enterprise.
ITMM 470 Fundamentals of Management for Technical Professionals
ITMM 481 IT Entrepreneurship
*AND select any two courses from ITMM or the following:*
BUS 100 Introduction to Business
ECON 151 Making Strategic Decisions in the Marketplace
*OR any BUS electives at the 200-level or above*
*OR any INTM electives selected with adviser’s approval.

**Software Development**
Focuses on programming and the development of sophisticated applications.
ITMD 415 Advanced Software Development
ITMD 462 Web Site Application Development
*AND select one course from the following:*
ITMD 412 Advanced Structured & Systems Programming
ITMD 413 Open Source Programming
ITMD 419 Topics in Software Development
ITMD 455 Intelligent Device Applications
*AND any ITMD elective.*
System Administration
Focuses on the administration and management of servers.
ITMO 441 Network Applications and Operations
AND select two courses from the following:
ITMO 433 Enterprise Server Administration
ITMO 450 Enterprise End-User System Administration
ITMO 453 Open Source Server Administration
AND select two courses from the following:
ITMO 417 Shell Scripting for System Administrators
ITMO 444 Cloud Computing Technologies
ITMO 454 Operating System Virtualization
ITMS 458 Operating System Security

Systems Security
Focuses on application, data, and network security and the
management of information technology security.
ITMS 478 Cyber Security Management
AND select one course from the following:
ITMO 433 Enterprise Server Administration
ITMO 441 Network Applications and Operations
ITMO 450 Enterprise End-User System Administration
ITMO 453 Open Source Server Administration
AND any two ITMS electives.

Web Design and Application Development
Focuses on the design and development of fully-interactive
Web sites and applications for Internet deployment.
ITMO 441 Network Applications and Operations
ITMD 462 Web Application Development
AND select two courses from the following:
ITMO 444 Cloud Computing Technologies
ITMD 455 Intelligent Device Applications
ITMD 463 Intermediate Web Site Application Development
ITMD 464 Advanced Web Site Application Development
ITMD 465 Rich Internet Applications
ITMD 466 Service Oriented Architecture
ITMD 467 Web Systems Integration
ITMD 469 Topics in Application Development

Students are required to complete a minor, although this requirement is waived for students
transferring or changing majors into the program who have completed more than thirty semester
hours of courses. The most common minor pursued by students in this degree is Psychology.

Students who meet the admission criteria have the opportunity to enroll as a co-terminal degree
student. This allows them to complete either the Master of Information Technology and
Management or the Master of Cyber Forensics and Security at the same time they are completing
their undergraduate degree. Three graduate courses double-count as undergraduate major
electives, and both degrees are conferred and awarded on the same date. Students enrolled in this
program must maintain a 3.0/4.0 grade point average.

D. Program Delivery Modes
The Bachelor of Information Technology and Management is a full-time or part-time, on-
campus, lecture/laboratory program. Over half of our courses are available in the evening, and
many courses are also offered at our suburban campus in Wheaton, Illinois. Most of the 4xx level
classes are also available via asynchronous delivery over the Internet to support traditional
undergraduate students, part-time students, and transfer students who work full- or part-time.
The program is not advertised as a remote or online degree and may not be completed as such.

E. Program Locations
All courses in the program are offered at the IIT Main Campus in Chicago, Illinois, or at the
Daniel F. and Ada L. Rice Campus in Wheaton, Illinois, or online. There are occasionally
courses which are offered exclusively online with both real-time and asynchronous sections.
While many courses are offered at both campuses, some courses are only offered at the Rice
Campus due to specialized laboratory facilities at that location. Free bus transportations is
provided for Main Campus students to attend these courses at the Rice Campus.
F. Public Disclosure

Program Education Objectives (PEOs) and Student Outcomes (SOs) are available at http://appliedtech.iit.edu/information-technology-and-management/programs/undergraduate; annual student enrollment and graduation data is posted at http://appliedtech.iit.edu/information-technology-and-management/about/mission/enrollment-graduation.

G. Deficiencies, Weaknesses or Concerns from Previous Evaluation(s) and the Actions Taken to Address Them

This is an initial accreditation.
GENERAL CRITERIA

CRITERION 1. STUDENTS

For the sections below, attach any written policies that apply. The sections of the current university Undergraduate Bulletin covering Undergraduate Admission and Academic Policies and Procedures are attached as Appendix G.

A. Student Admissions

Admission decisions are based on academic performance, standardized test scores, teacher/counselor recommendations and evidence of promise to succeed, which includes co-curricular activities, interests and hobbies, and personal maturity.

Students who have attended an accredited high school (although we do accept home schooled students) and engaged in a college preparatory or general education curriculum generally make good candidates for IIT. Specifically, we recommend the following high school courses be completed:

- 4 years of English
- 4 years of Mathematics
- 3 years of Science

It is expected that students select a rigorous high school program that includes AP, IB or honors courses when they are available at the student's school. Students are encouraged to take college courses to supplement their education while they are enrolled in high school.

Students are required to submit official high school transcripts and ACT or SAT scores along with recommendations for evaluation for admission. In general applicants with an unweighted grade point average greater or equal to 3.0 (4 point scale) and ACT scores greater or equal to 24 math and 24 composite or SAT scores greater or equal to 1150 are considered for review for admission. Students considering engineering should have higher grades in math along with higher math scores on the ACT or SAT tests. All applicants are reviewed and if necessary marginal cases will be submitted for review by an admission committee.

B. Evaluating Student Performance

Each student’s progress is monitored at mid semester (1st and 2nd year courses) by the departmental advisor and the Director of Undergraduate Advising and at the end of each semester by the associate chair of the department and the Vice Provost’s office. Degree Works, the online degree audit system, is used to facilitate this process. Students whose progress is unsatisfactory due to low grades are placed on academic probation and notified by email and letter. Students whose progress is unsatisfactory because they have failed to make adequate academic progress—completion of 12 credit hours/semester hours for full-time students or 6 credit hours/semester hours for part time students—towards their degree are placed on academic probation based on the recommendation from the student’s Academic Unit (AU) and notified by email and letter. This information is also recorded in the Banner Student Information System and Degree Works. Students on probation are limited to 15 credit hours/semester hours of coursework, and may not hold office in any student organization. Academic probation may affect a student’s eligibility to participate in varsity athletic sports. IIT is classified as having “selective” admissions, and student academic problems are not usually associated with
insufficient ability or preparation, but more commonly with difficulty adjusting to college, inappropriate choice of major, or financial/emotional stress, and the Student Counseling Center is equipped to help is such cases. If a student stays on academic probation for two (or more) consecutive semesters, the student may be dismissed.

Students are evaluated using a traditional 4-point grading scale, with grades being assigned by the course instructor. All courses have stated learning objectives and instructors are expected to test achievement of those objectives and assign grades based on achievement of those objectives. Specific protocols have been developed for evaluating written and oral communication skills, and the several teamwork and ethics objectives of the IPRO program (see Appendix D). Thus a passing grade in a course implies achievement of the learning objectives at a minimum acceptable level.

The student registration system, Banner, maintains and enforces course prerequisite controls. If a student is currently taking a class that is prerequisite for a course in the following semester, Banner does allow the student to add the class on the following term even though the prerequisite has not yet been satisfied. However the Registrar and Director of Academic Advising review any students who ultimately fail courses that are a prerequisite for a course they registered for, and we have them removed from the course. Instructors for a course, in consultation with a student’s faculty advisor, are allowed to waive a prerequisite for a course for a student by setting a permit in Banner. Prerequisites may also be waived at the departmental level by the Associate Chair.

C. Transfer Students and Transfer Courses

Transfer applicants must be in good academic standing at their previous colleges to be considered for admission to IIT. Applicants with less than 30 hours of transferable college course work must submit high school transcripts and SAT or ACT scores as part of their application. Admission is based upon a cumulative GPA and individual grades in all classes that apply to the selected major. A minimum cumulative GPA of 3.0 is expected for transfer consideration. However, a transfer applicant who has special circumstances will be reviewed by a faculty committee.

The Office of Undergraduate Academic Affairs is responsible for verifying all courses transferred from other colleges. Transfer credit is granted only for courses completed at accredited colleges and universities.

Official credit evaluations are completed only after a student is admitted to IIT. Transfer credit is granted on a course equivalency basis, i.e., the nature, content, level and prerequisites of the course must be comparable to those offered at IIT. Students may transfer a maximum of 68 applicable credits from a 2-year college. Transfer students must complete their last 45 credits at IIT with at least 50% of the course work at the 300- and 400-level in their major discipline. Transfer credit will be accepted for courses completed with the equivalent of a grade of “C” or better. A grade of “C-“is not acceptable for transfer credit.

Dual admission programs specific to the Bachelor of Information Technology and Management degree have been established with College of DuPage (COD) in Glen Ellyn, Illinois, and Joliet Junior College (JJC) in Joliet, Illinois. Students who meet the requirements of the Dual Admissions Program (DAP) may enroll simultaneously at these schools and at IIT. Applicants must complete a Statement of Intent Form, which permits the exchange of academic admission and advising information between IIT and COD or JJC. Applicants must also complete the application process at both COD or JJC and IIT in order to be admitted to both institutions. The
IIT application may be submitted only for a Bachelor’s program in Information Technology and Management. Admission to other IIT programs may have additional requirements that are outside the scope of the program. Students accepted into the DAP will have access to advising and other services from both institutions. Students enrolled in the DAP must have and maintain a GPA of 3.0 at COD or JCC to remain eligible for admission to IIT. Students must make satisfactory academic progress at COD, as defined by COD, or at JJC, as defined by JJC. Students who successfully complete the institutional course requirements of both institutions under the DAP will be awarded an Associate’s degree from COD or JJC and a Bachelor of Information Technology and Management from IIT.

**D. Advising and Career Guidance**

Newly admitted first-year ITM undergraduate students are advised by the ITM Director of Undergraduate Advising, Professor Ray Trygstad, while newly admitted transfer students to the degree are generally advised by Professor Jeremy Hajek. New student advising runs from April through August for Fall new admits, and November through January for Spring new admits. There is a campus-wide, new student advising application for advisors and new students to make this process easier. All new students are advised at one of the summer or winter orientation sessions, or via email/phone for out of state students before they arrive on campus. Usually 15-30 minutes is spent on each incoming student plus numerous e-mails. After this advising session the new student registers online and courses are reviewed by their advisor.

**Advising of Continuing Students**

Continuing students are normally advised by their originally assigned advisor through graduation. Students are urged to make advising appointments well prior to the registration period which opens near the 12th week of the semester. Prior to these appointments, an extensive set of advising notes for the upcoming semester are made available by the ITM Director of Undergraduate Advising and all undergraduates are advised by email to read these notes prior to coming to their advising appointment. A copy of these notes are included as Appendix H. It is Department policy that to the maximum extent possible advising appointments are conducted in person, but under exigent circumstances may be done by phone or email. Digital notes are used to document any advising discussions for review by the student and other advisors.

Continuing students follow the ITM curriculum that was in place when he or she began studies at IIT. During a student’s (new student or transfer student) initial advising session with their advisor, they are informed of the current ITM curriculum in Degree Works; usually this is the one printed in the current IIT Undergraduate Bulletin.

When a student has completed two years of study (or around 60-70 credit hours), Undergraduate Academic Affairs completes an “Official Academic Audit” (see sample in Appendix I) for the student’s chosen major and sends a copy to the student and Department. The “Official Academic Audit” is used by the advisor and updated, with the student, in each advising session. This audit is officially updated by Undergraduate Academic Affairs whenever the student requests it and also when the student applies for graduation.

Any modifications to the ITM Undergraduate Curriculum are posted to the Department Blog with appropriate effective dates, and the Undergraduate Studies Committee and the Office of Undergraduate Academic Affairs are notified as well. If modifications are extensive, approval by the Undergraduate Studies Committee, the University Faculty Council, the university Faculty, and the Board of Trustees will be obtained; the level of approval is based on the magnitude of the change. Curriculum modification and changes may be reflected in online revisions to the
Undergraduate Bulletin, issued by Undergraduate Academic Affairs between the normal biennial publication cycle of the Bulletin.

Other Advising Related Items

- Advisors are aware of the various student assistance services available on campus (Academic Resource Center, Student Health and Wellness Center, Career Management Center, Disability Resources, Residence Hall Advisors, and the Counseling Center).
- Early Warning – As part of a school wide retention program, 1xx and 2xx level (and some upper level) class faculty report poor attendance, assignment, quiz and exam grades every week through an automated email collection system, which is then shared with Academic Resource Center tutoring usage is also collected and shared. This allows early intervention for at risk students. Midterm Grades are also submitted in all 1xx and 2xx level courses, and this is also shared with a student’s advisor.
- Academic Standing Review – After every semester’s grades are reported, the ITM Director of Undergraduate Advising communicates with the Associate Provost to discuss students that are candidates for academic probation or dismissal (as defined in the Undergraduate Bulletin). Students on probation are limited to 15 hours in the next term, and are noted for additional oversight by advisors. Some students are required to take additional classes (GLS 180, GLS 181, GLS 227) as part of our General Learning Strategies Program, also known as the Kedge program—a kedge is a small anchor used to move a ship. First-year students whose GPA at the end of the first semester is below 2.0 may be encouraged to enroll in the course PSYC 180, Early Adulthood, to assist them in their transition from secondary to higher education. Additional advising discussions are also had with students who get a D or E in a class, when possible retakes are discussed.
- The Career Management Center provides students with career related seminars, career fairs, and job listings.
- The ACM Employment Seminar, held every semester, is another forum where students are able to meet with professionals (usually alumni) and discuss career options.
- The School of Applied Technology provides professional counseling and instruction in resume preparation for students in the college, including students in Information Technology and Management.

E. Work in Lieu of Courses

IIT will award credit for CEEB Advanced Placement (AP) examinations, the higher level (HL) International Baccalaureate examinations and the General Certificate of Education (GCE) examinations. Credit will vary based on test score. Credit may also be accepted, based on appropriate documentation and scores, for DANTES, military experience, and CLEP. IIT will also award credit by examination, and selected industry certifications may be accepted by the ITM Department as evidence of completion of the examination. IIT does not grant credit for vocational courses or life/work experience.

F. Graduation Requirements

Bachelor of Information Technology and Management total hours 127

- ITM Requirements 38 hours - ITM 100, 301, 311, 312, ITMD 361, 362, 411, 421, ITMM 471, ITMO 440, 456, ITMS 448, ITMT 430
- ITM Electives 18 hours (Select courses from ITM, ITMD, ITMM, ITMO, ITMS, ITMT, and TECH)
Mathematics Requirements 6 hours - A mathematics elective at the level of MATH 119 or above—MATH 230 is strongly recommended—and a Statistics Elective: BUS 221, PSYC 203 or MATH 425

Natural Science and Engineering Requirements 11 hours - EG 225 is recommended

Humanities and Social Sciences Requirements 21 hours - PSYC 301 is recommended

Interprofessional Projects 6 hours

Minor Electives 15 hours

Free Electives 12 hours

For transfer students, ITM 100 Introduction to the Profession and minor electives are normally waived and replaced with transferred free or technical electives.

The Office of Undergraduate Academic Affairs is responsible for certifying that an individual student has satisfied the prescribed curriculum for a Bachelor’s degree. When necessary, the associate chair of the major academic department provides assistance in the verification process.

An academic audit provides a summary of a student’s academic status to date and lists the courses to be completed in order to receive a degree. Students who have completed at least 60 semester hours (including applicable transfer credit) will receive an audit from the Office of Undergraduate Academic Affairs. After receiving their first audit, students may request periodic updates. Students and faculty advisors also have access to Degree Works, the online degree audit/advising system that is maintained by the Office of Undergraduate Academic Affairs. This system provides an unofficial audit to assist with academic advising.

After a student submits an application for degree conferral, a graduation audit is completed and a letter, which indicates the remaining requirements for the degree, is sent to the student. The final audit is completed when the grades for the semester are recorded and, if all requirements are completed, the degree is awarded.

G. Transcripts of Recent Graduates

The program will provide transcripts from some of the most recent graduates to the visiting team along with any needed explanation of how the transcripts are to be interpreted when requested by the program evaluation team chair.
CRITERION 2. PROGRAM EDUCATIONAL OBJECTIVES

A. Mission Statement
To provide distinctive and relevant education in an environment of scientific, technological, and professional knowledge creation and innovation.

B. Program Educational Objectives
The mission of the Information Technology and Management program is to educate and inform students to prepare them to assume technical and managerial leadership in the information technology field and to advance knowledge through research and scholarship.

The Bachelor of Information Technology and Management produces graduates who are able to:
- Problem solve and create innovative answers to provide technology solutions for the problems of business, industry, government, non-profit organizations, and individuals.
- Identify and analyze user needs, identify and define computing requirements appropriate to the problem solution, and take them into account in the selection, creation, evaluation, and administration of computer- and network-based systems.
- Apply current technical and mathematical concepts and practices in the core information technologies and recognize the need to engage in continuing professional development.

To meet these goals, graduates must demonstrate knowledge and proficiency in these areas:
- Information technology basics including hardware and operating systems
- Application development and programming
- Human-Computer interaction
- Databases and data management
- Networking and communications
- Websystems
- Cybersecurity
- Professionalism

The public can find these objectives on the mission page of the Department of Information Technology and Management (http://appliedtech.iit.edu/information-technology-and-management/about/mission) and on page 116 of the current IIT Undergraduate Bulletin (http://web.iit.edu/sites/web/files/departments/academic-affairs/Undergraduate%20Academic%20Affairs/pdfs/ugbulletin14-16.pdf)

C. Consistency of the Program Educational Objectives with the Mission of the Institution
The key ideas in IIT’s mission are:
“distinctive” – We believe the combination of breadth and depth of our course requirements, the focus on industry experience among our faculty, and our strong emphasis on information technology as integral and essential to facilitation of business processes clearly makes the Bachelor of Information Technology and Management degree distinctive.

“relevant” – Students in the degree are actively learning to solve problems and provide solutions for a broad range of constituencies which includes business, industry, government, non-profit organizations, and individuals. They learn how to stay abreast of technological developments to allow them to employ the latest tools and methods to provide these solutions.
"innovation" – The interdisciplinary nature of the university’s signature undergraduate Interprofessional Projects (IPROs), the focus on creating innovative answers for business problems in ITM courses, the continuous updating of ITM electives, and the offering of a dedicated course in business innovation ensure that students understand the value of innovation in whatever career they pursue.

D. Program Constituencies

The key constituents of the Bachelor of Information Technology and Management degree are:

- Students
- Faculty
- Alumni
- Business, Industry, and Government Partners

The program educational objectives align with each of these constituencies.

**Students** clearly have an interest in learning both the breadth and depth of information technology, as well as exposure to problem solving, innovation and professional development. A productive career in information technology does not result from mere knowledge of the technologies, and our program objectives clearly demonstrate that we value a broader set of qualities in our graduates.

**Faculty** are well served by ensuring that the foundations of information technology are taught as the students they work with will be capable of designing complex information systems and ultimately will serve them well either in post-graduate employment or in further graduate studies. Additionally, faculty are able to propose and develop new electives in the latest areas in the field which for our full-time faculty helps them to stay on top of trends, and for our part–time faculty allows them to impart the latest knowledge in their field to our students.

**Alumni** are clearly influenced by the reputation of our department. We believe achieving our program objectives will produce strong graduates. Our alumni frequently seek out undergraduates for internship or full time opportunities, knowing that success in our program ensures a successful employee.

**Business, Industry, and Government Partners** rely upon graduates from IIT for additions to their workforce. Clearly, the ability of these students to adapt to new technology is paramount. The program is fortunate to have a strong industry advisory function in the School of Applied Technology Board of Overseers, who provide oversight for all of the degree programs in the college. The Department also actively engages with these constituents through membership and active involvement in organizations and events such as the Illinois Technology Foundation, the Illinois Technology Association, the Chicago Premier CIO Forum, and the Chicago-area Technology Executives Club.

E. Process for Review of the Program Educational Objectives

The constituents driving the review and possible update of our program educational objectives are the IIT administration and trustees who develop IIT’s mission and vision as approved by IIT faculty, and the School of Applied Technology Board of Overseers who meet periodically and help set the direction of the ITM Department. The university also engages in peer review through the use of External Program Reviews, chaired by a Trustee of the university and conducted by academic leaders from other institutions in the same disciplines as the departments under review. Our most recent External Program Review was conducted in April 2014 and is included as
Appendix E. The ITM Curriculum Committee considers feedback from all of these sources as a regular part of their deliberations and uses this to help shape the direction and focus of the curriculum, and to conduct periodic reviews of our overall objectives to ensure we are meeting the needs of all of our constituencies.
CRITERION 3. STUDENT OUTCOMES

A. Student Outcomes

The Department embraces the Student outcomes suggested in the ABET Criteria. Consequently, the program must enable students to attain, by the time of graduation:

(a) An ability to apply knowledge of computing and mathematics appropriate to the program’s student outcomes and to the discipline

(b) An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution

(c) An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs

(d) An ability to function effectively on teams to accomplish a common goal

(e) An understanding of professional, ethical, legal, security and social issues and responsibilities

(f) An ability to communicate effectively with a range of audiences

(g) An ability to analyze the local and global impact of computing on individuals, organizations, and society

(h) Recognition of the need for and an ability to engage in continuing professional development

(i) An ability to use current techniques, skills, and tools necessary for computing practice.

(j) An ability to use and apply current technical concepts and practices in the core information technologies and recognize the need to engage in continuing professional development.

(k) An ability to identify and analyze user needs and take them into account in the selection, creation, evaluation and administration of computer-based systems.

(l) An ability to effectively integrate IT-based solutions into the user environment.

(m) An understanding of best practices and standards and their application.

(n) An ability to assist in the creation of an effective project plan.

B. Relationship of Student Outcomes to Program Educational Objectives

<table>
<thead>
<tr>
<th>Program Educational Objective</th>
<th>Outcomes</th>
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<tbody>
<tr>
<td>Problem solve and create innovative answers to provide technology solutions for the problems of business, industry, government, non-profit organizations, and individuals.</td>
<td>a, b, c, i</td>
</tr>
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<td>b, c, i, k</td>
</tr>
<tr>
<td>Apply current technical and mathematical concepts and practices in the core information technologies and recognize the need to engage in continuing professional development.</td>
<td>a, h, j</td>
</tr>
</tbody>
</table>
C. Process for the Establishment and Revision of the Student Outcomes

The constituents driving the review and possible update the student outcomes are ABET (who periodically update the suggested student outcomes/characteristics with industry input), the School of Applied Technology Board of Visitors, and feedback from our recent alumni surveys. The ITM Curriculum Committee considers feedback from these constituents about every three years. Any changes are documented in records of the Curriculum Committee.

D. Enabled Student Characteristics

The ITM department utilizes all of the characteristics suggested in the ABET criteria as our student outcomes. Details are in the following section, Criterion 5.A. below on how our program curriculum enables each characteristic.
CRITERION 4. CONTINUOUS IMPROVEMENT

A. Student Outcomes

ITM Undergraduate Program Evaluation is an ongoing, overlapping process in which new goals are established each year in addition to implementation of the previous year's recommendations.

The ITM program has, for the last sixteen semesters, achieved one of the best student evaluation ratings both for instructor teaching and course content. The curriculum oversight committee reviews the student responses, makes teaching recommendations for the next semester, and provides feedback to individual faculty. The oversight committee consists of Department Chair, Dr. Carl Carlson, Associate Chair, Raymond Trygstad, and SAT Director of Academic Affairs, Madeleine England.

Each semester the Director of Academic Affairs, Madeleine England, conducts reviews of the grade distribution for each course to check for irregularities and to verify grades for students at academic risk. For those students whose performance is questionable, she consults with their instructors and works with the student on an individual plan for performance improvement.

Data Collection

Academic Year 2013/2014

For each ITM course a faculty member was assigned responsibility for creation of the course syllabus and prescribed learning outcomes.

For an ITM course taught by more than one faculty member, a course coordinator was named and made responsible for the creation of a common course syllabus and prescribed learning outcomes.

Current ITM students were surveyed to find out what topics and technologies they would like to see in the curriculum.

Fall Semester 2014

All undergraduate level course syllabi were reviewed and edited to ensure standardization in formatting, measurable student objectives, and clear grading rubrics. All faculty and course coordinators were provided training in ABET IT expectations for course syllabi.

Graduating seniors were asked to evaluate the entire ITM Program and to provide feedback on whether or not the ITM degree met their program expectations. This feedback is being used to make future curriculum adjustments and to note market changes, ensuring relevancy in ITM program offerings. Survey results are included in Criterion 4.C. below.

Two courses were chosen as a pilot for an ITM specific course evaluation. In these courses, students fill out a more in-depth course evaluation in addition to the University-wide evaluation tools. This data will allow us to hone in on course and faculty strengths and weaknesses, and provides a set of criterion that can be used to evaluate all ITM courses. Additionally, in order to allow for anonymity, course evaluations were distributed by departmental representatives without the instructor in the room. Once completed, all evaluations were placed in an envelope, sealed, and delivered directly to the Department Manager, Amber Chatellier. After departmental review, the evaluation data was provided to
each instructor. An evaluation sample and tabulation of the results will be available during the site visit.

One course was used as a test for tracking final exam data. In this course, the instructor tabulated the score achieved by every student for every individual short answer question on the final exam. That data is then averaged and is a measure for student success on each question. The instructor can use that information to then make adjustments to course content for the next term. Exam tabulation results will be available during the site visit.

Spring Semester 2015

All undergraduate level course syllabi were reviewed and edited to ensure standardization in formatting, measurable student objectives, and clear grading rubrics. All faculty and course coordinators were provided training in ABET IT expectations for course syllabi.

Members of the curriculum oversight committee made unannounced class visits to validate that the course is following syllabus timelines, to assess whether or not the instructor is teaching to the course objectives, and to observe student engagement. Additionally, these visits serve as a tool to assess teaching style, course design, and the validity of course materials. Following these visits the committee provides feedback to the instructor. The Visit Observation Form and this semester’s results will be available during the site visit.

Graduating seniors were again asked to evaluate the entire ITM Program and to provide feedback on whether or not the ITM degree met their program expectation. This feedback is being used to make future curriculum adjustments and to note market changes, ensuring relevancy in ITM program offerings. Survey results will be available during the site visit.

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Fall Semester 2015

Members of the curriculum oversight committee will continue to make class visits and graduating senior surveys will continue to be given as in previous semesters.

Faculty will be asked to give pre- and post-, non-graded exams to validate that the student outcomes for their course are achieved.

We will expand the use of the ITM-specific course evaluation to six additional courses, or eight total courses for the term.
We will continue to track final exam success in one course to discern whether this is a useful tool across all classes.

**B. Continuous Improvement**

Constant and ongoing feedback is the basis for continuous improvement in our department. In addition to the concrete items listed above, we have implemented the following:

*Evaluations:* At the department level we send out multiple reminders to students to complete the University course and instructor evaluations every term. In addition, many of our faculty also request students complete a separate evaluation very specific to the course they just completed. Finally we requested that graduating students complete a program evaluation. This overarching evaluation allows us to gain insight on what our students find the most relevant and where we need to improve.

*Grievance Process:* In order to address specific student concerns, we have created a path and process for students to express grievances and concerns. Students can begin by discussing concerns with Program Manager, Amber Chatellier. After Amber, students can speak with Associate Chair, Raymond Trygstad. Finally, issues that are not resolved within the department will be addressed by SAT Director of Academic Affairs, Madeleine England. The creation of a set path has provided an “open door” culture that allows students multiple opportunities to voice concerns and criticism in a safe and non-judgmental environment.

Over the last two academic years we have gathered the feedback received from students, faculty and other University personnel and made program improvements.

Based on program reviews in 2013/2014, we proposed changes to the graduate curriculum that we feel will have a very positive impact on undergraduate education. Though IIT allows graduate students to take up to four 4xx level courses as part of their master degree program, we were given approval to allow only 5xx level courses within the ITM masters degree program. This change enables faculty to focus the learning objectives for all 4xx level courses on the educational needs of our undergraduate students. Additionally, it limits the enrollment levels of all 4xx level courses to facilitate individualized learning.

Undergraduate students admitted to the co-terminal bachelor/master degree program are permitted to take three 5xx level elective courses that can be applied toward their bachelor degree and master degree program requirements.

Based on program reviews in 2014/2015 we proposed the following undergraduate course changes:

- ITMD 434, Human/Computer Interaction, has been restructured as ITMD 362, Human/Computer Interaction and Web Design.
- ITMD 461, Internet Technologies and Web Design, has been restructured as ITMD 361, Fundamentals of Web Development.
- We have eliminated two six-hour system administration courses, ITM 451 Distributed Workstation System Administration (Microsoft Windows), and ITM 452 Client-Server System Administration (UNIX/Linux) and replaced them with the three-hour courses ITMO 433 Enterprise Server Administration, ITMO 450 Enterprise End-User System Administration, and ITMO 453 Open Source Server Administration.
We have added a key security management course, ITMS 484 Governance, Risk and Compliance; this course had been previously offered as a topic in ITMS 479 Topics in Information Security.

We have added a program capstone course, ITMT 430, System Integration.

We have tested a new data management course, Big Data, in the ITM 469 Topics in Application Development course.

C. Additional Information

In this section, we identify some of the data being collected as part of our assessment processes.

University Sponsored Online Student Surveys
Each semester the university sponsors an online student survey that asks students to assess each course they are taking, assess the effectiveness of the instructor teaching that course, and submit comments about the course. For the last sixteen semesters, the ITM program has received one of the top ratings in both categories. The comments section for each course always elaborates on the student’s reasoning behind their assessment. We have been very impressed by the time and effort put in by our students to provide us with meaningful and thoughtful feedback on our courses. We pay a lot of attention to these comments. Representative survey results are included as Appendix F.

Graduating ITM Student Survey
In Fall of 2014 the ITM program initiated a survey of its graduating students to get feedback on the ITM program. Here are the results of the Fall 2014 survey. We are waiting for the results of the Spring 2015 survey and will have it for the ABET IT Assessment Visit and to assess any changes we might need to make regarding how we approach “Soft Skill Development”.

Satisfaction with ITM program
- Comprehensive set of relevant courses .............................................. 4.7/5.0
- Faculty are effective teachers .............................................................. 4.2/5.0
- **Total** ............................................................................................. 4.5/5.0

Distinctive Real World ITM Educational Experience
- Faculty bring real world experience to the classroom ....................... 4.6/5.0
- Real world student projects are relevant to their career objectives .......... 4.0/5.0
- Students are challenged to apply their knowledge to real world problems 3.7/5.0
- **Total** ............................................................................................. 4.1/5.0

Soft Skill Development
- Students learn to collaborate on real world projects .......................... 3.9/5.0
- Students learn to develop leadership skills ......................................... 3.3/5.0
- Students learn to develop communication skills ............................... 3.8/5.0
- Students learn to develop problem solving skills .............................. 4.1/5.0
- Students learn to develop innovation skills ...................................... 3.6/5.0
- **Total** ............................................................................................ 3.7/5.0

Career Opportunities
- Graduates find rewarding opportunities in industry ......................... 4.2/5.0
Unannounced Peer Faculty Classroom Observation Visits
In Spring 2015, ITM initiated a process whereby members of the Curriculum Oversight Committee each made classroom visits to four different courses. Over the course of two years, it is hoped that all classrooms can be visited. Feedback from these visits were shared with the faculty teaching those courses. The Visit Observation Form and this semester’s results will be available during the site visit.

Individualized Course Assessment Questionnaires
Faculty have been encouraged to develop either formal or informal feedback approaches for courses that they teach. The School of Applied Technology Director of Academic Affairs, Madeline England has developed an assessment questionnaire used to provide instructor feedback. In the future, we might want to focus on courses in the curriculum where we can gather student feedback on issues such as (1) have students experienced an improvement in their programming skills after a sequence of programming courses, (2) have their communication skills improved after a sequence of courses in which students are required to demonstrate their communication skills, and (3) have students demonstrated in the Systems Integration the ability to integrate concepts developed in earlier application oriented courses.
CRITERION 5. CURRICULUM

A. Program Curriculum
Commences on next page following.
**Table 5-1 Curriculum**

**Bachelor of Information Technology and Management (8 Semester Program)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Subject Area (Credit Hours)</th>
<th>Indicate Whether Course is Required, Elective or a Selected Elective by an R, an E or an SE.</th>
<th>Computing Topics Mark with an F or A for Fundamental or Advanced</th>
<th>General Education (IIT Common Core)</th>
<th>Other</th>
<th>Last Two Terms the Course was Offered: Year and, Semester, or Quarter</th>
<th>Average Section Enrollment for the Last Two Terms the Course was Offered²</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-ITM 301 Intro to Computer Operating Systems and Hardware I</td>
<td></td>
<td>R</td>
<td>3-F</td>
<td></td>
<td></td>
<td>F14,S15</td>
<td>17</td>
</tr>
<tr>
<td>1-ITMD 421 Data Modeling and Applications</td>
<td></td>
<td>R</td>
<td>3-F</td>
<td></td>
<td></td>
<td>F14,S15</td>
<td>24³</td>
</tr>
<tr>
<td>1-Natural Science or Engineering Elective</td>
<td></td>
<td>R</td>
<td>4</td>
<td>4</td>
<td></td>
<td>F14,S15</td>
<td>35</td>
</tr>
<tr>
<td>1-Humanities 100/200 level Elective</td>
<td></td>
<td>SE Adam joule</td>
<td>3</td>
<td></td>
<td></td>
<td>F14,S15</td>
<td>20</td>
</tr>
<tr>
<td>2-Social or Behavioral Science Elective</td>
<td></td>
<td>SE</td>
<td>3</td>
<td></td>
<td></td>
<td>F14,S15</td>
<td>30</td>
</tr>
<tr>
<td>2-ITM 100 Intro to the Profession of Information Technology</td>
<td></td>
<td>R</td>
<td>2-F</td>
<td></td>
<td></td>
<td>S14,S15</td>
<td>14</td>
</tr>
<tr>
<td>2-ITM 311 Introduction to Software Development</td>
<td></td>
<td>R</td>
<td>3-F</td>
<td>3</td>
<td></td>
<td>F14,S15</td>
<td>14</td>
</tr>
<tr>
<td>2-Mathematics Elective (MATH 320 Discrete Math recommended)</td>
<td></td>
<td>SE</td>
<td>3</td>
<td>3</td>
<td></td>
<td>S14,S15</td>
<td>32</td>
</tr>
<tr>
<td>2-Natural Science or Engineering Elective</td>
<td></td>
<td>SE</td>
<td>4</td>
<td>4</td>
<td></td>
<td>F14,S15</td>
<td>35</td>
</tr>
<tr>
<td>3-ITM 312 Introduction to Systems Software Programming</td>
<td></td>
<td>R</td>
<td>3-F</td>
<td></td>
<td></td>
<td>F14,S15</td>
<td>13</td>
</tr>
<tr>
<td>3-ITMM 471 Project Management for Info Technology</td>
<td></td>
<td>R</td>
<td>3-F</td>
<td></td>
<td></td>
<td>F14,S15</td>
<td>18</td>
</tr>
<tr>
<td>3-ITMO 440 Introduction to Data Networks and the Internet</td>
<td></td>
<td>R</td>
<td>3-F</td>
<td></td>
<td></td>
<td>F14,S15</td>
<td>19</td>
</tr>
<tr>
<td>3-Natural Science or Engineering Elective</td>
<td></td>
<td>R</td>
<td>3</td>
<td>3</td>
<td></td>
<td>F14,S15</td>
<td>35</td>
</tr>
<tr>
<td>3-Social or Behavioral Science Elective (Upper Level 300+)</td>
<td></td>
<td>SE</td>
<td>3</td>
<td></td>
<td></td>
<td>F14,S15</td>
<td>35</td>
</tr>
<tr>
<td>4-ITMD 411 Intermediate Software Development</td>
<td></td>
<td>R</td>
<td>3-A</td>
<td></td>
<td></td>
<td>F14,S15</td>
<td>29³</td>
</tr>
<tr>
<td>4-ITMO 456 Introduction to Open Source Operating Systems</td>
<td></td>
<td>R</td>
<td>3-F</td>
<td></td>
<td></td>
<td>F14,S15</td>
<td>16³</td>
</tr>
<tr>
<td>4-ITMD 361 Fundamentals of Web Development</td>
<td></td>
<td>R</td>
<td>3-F</td>
<td></td>
<td></td>
<td>See note 4</td>
<td>38³⁴</td>
</tr>
<tr>
<td>4-ITM Elective</td>
<td></td>
<td>SE</td>
<td>3-A</td>
<td></td>
<td></td>
<td>F14,S15</td>
<td>5</td>
</tr>
<tr>
<td>4-Mathematics Stats Elective (BUS 221, MATH 425, PSYC 203)</td>
<td></td>
<td>SE</td>
<td>3</td>
<td>3</td>
<td></td>
<td>S14,S15</td>
<td>39</td>
</tr>
<tr>
<td>4-Minor Elective</td>
<td></td>
<td>SE</td>
<td>3</td>
<td></td>
<td></td>
<td>F14,S15</td>
<td>20</td>
</tr>
<tr>
<td>5-ITM Elective</td>
<td></td>
<td>R</td>
<td>3-A</td>
<td></td>
<td></td>
<td>F14,S15</td>
<td>5</td>
</tr>
<tr>
<td>5-ITM Elective</td>
<td></td>
<td>R</td>
<td>3-A</td>
<td></td>
<td></td>
<td>F14,S15</td>
<td>5</td>
</tr>
<tr>
<td>5-Social or Behavioral Science Elective (Upper Level 300+)</td>
<td></td>
<td>SE</td>
<td>3</td>
<td></td>
<td></td>
<td>F14,S15</td>
<td>35</td>
</tr>
</tbody>
</table>
### 1. Required courses are required of all students in the program, elective courses (often referred to as open or free electives) are optional for students, and selected elective courses are those for which students must take one or more courses from a specified group.

### 2. For courses that include multiple elements (lecture, laboratory, recitation, etc.), indicate the maximum enrollment in each element. For selected elective courses, indicate the maximum enrollment for each option.

### 3. Enrollment in terms before Spring 2015 term includes graduate students.

### 4. ITMD 361 is a new version of the introductory web development class that has not yet been offered. Enrollment indicated is for the previous course, ITMD 461.

### 5. Average enrollment in electives is low because most upper-level electives share a common lecture and instructor with graduate sections of the course. Without our large graduate enrollment we would be unable to provide the breadth of electives made available to our undergraduates.

### 6. ITMD 362 is a new version of the human/computer interaction class that has not yet been offered. Enrollment indicated is for the previous HCI course, ITMD 434.

### 7. ITMT 430 System Integration is a new capstone course to be offered for the first time in Spring 2016.
ITM Requirements 38 hours ITM 100, 301, 311, 312, ITMD 361, 362, 411, 421, ITMM 471, ITMO 440, 456, ITMS 448, ITMT 430

ITM 100, ITMD 362 and ITMT 430 are offered only in the Spring, and ITMS 448 is offered only in the Fall All other courses are normally offered every term

ITM Electives 18 hours

- Select from ITMD, ITMM, ITMO, ITMS, ITMT, and TECH
- The following electives are normally offered every term: ITMD 415 Advanced Software Development, ITMD 455 Open Source Intelligent Device Applications, ITMM 470 Fundamentals of Management for Technology Professionals, and ITMM 482 Business Innovation
- The following electives are offered based on student or faculty demand: ITM 300 Communication in the Workplace, ITM 497 Independent Study, ITMD 469 Topics in Application Development, ITMT 491 Undergraduate Research, ITMT 495 Topics in Information Technology, and TECH 497 Special Projects
- Approximately ten graduate-level ITM elective courses are offered every semester which undergraduates may take with permission of their adviser. Offerings are determined by the ITM Department based on current graduate programs of study, historical demand, as well as faculty preferences.
- Seven entirely optional specializations are available in the areas of Data Management, IT Entrepreneurship and Management, Networking and Communications, Software
Development, System Administration, Systems Security, and Web Design and Application Development. These specializations are defined by the selection of four of the six ITM elective courses. As these are optional they are not considered separate curricular tracks.

Mathematics Requirements 6 hours
- A mathematics elective at the level of MATH 119 or above; MATH 230 Discrete Mathematics is strongly recommended and is offered every other semester. In fall of 2016 we expect to make MATH 230 mandatory.
- A Statistics Elective: BUS 221, PSYC 203 or MATH 425. PSYC 203 is offered every semester and BUS 211 and MATH 425 are offered every other semester.

Natural Science and Engineering Requirements 11 hours
- EG 225 Engineering Graphics for Non-Engineers is recommended and is offered every semester. Follow-on EG electives, EG 325 and EG 425, are also offered every semester.
- CHEM122/124 Principles of Chemistry are offered every semester.
- BIOL 105 Introduction to Biology or BIOL107 General Biology Lectures and BIOL114-Introduction to Human Biology or BIOL 115 Human Biology are offered every other semester. A separate laboratory section is available for each course.
- PHYS120-Astronomy is offered every third semester.

Humanities and Social or Behavioral Science Requirements 21 hours
- 80-90 Humanities and Social Science electives are offered every term
- PSYC 301 Industrial Psychology is recommended

Interprofessional Projects 6 hours
- 30-40 different Interprofessional Projects (IPROs) are offered every semester across a wide variety of topics and application areas. These projects develop communication, teamwork, and leadership skills, as well as an awareness of economic, marketing, ethical, and social issues within the framework of a multidisciplinary team project. The project teams will be integrated across academic programs and at different levels within programs.

Minor Electives 15 hours
- A minor consists of 15 hours or more of study in a field of study outside of students’ major department. IIT offers a broad range of minors listed starting on page 162 of the current undergraduate bulletin. Students transferring into the ITM program with more than 30 semester hours of credit normally have the minor requirement waived

Free Electives 12 hours
- Students may choose any course for free electives except for remedial courses.
2. Describe how the curriculum aligns with the program educational objectives.

<table>
<thead>
<tr>
<th>Program Educational Objective</th>
<th>Required Courses Supporting the Objective</th>
</tr>
</thead>
</table>
| Problem solve and create innovative answers to provide technology solutions for the problems of business, industry, government, non-profit organizations, and individuals. | ITM 100 Intro to Information Technology as a Profession  
ITMD 411 Intermediate Software Development  
ITMD 421 Data Modeling & Applications  
ITMT 430 Systems Integration  
IPRO 397/497 Interprofessional Project |
| Identify and analyze user needs, identify and define computing requirements appropriate to the problem solution, and take them into account in the selection, creation, evaluation, and administration of computer- and network-based systems. | ITM 100 Intro to Information Technology as a Profession  
ITM 311 Introduction to Software Development  
ITMD 362 Human-Computer Interaction and Web Design  
ITMO 440 Introduction to Data Networking & the Internet  
ITMO 456 Introduction to Open Source Operating Systems  
ITMS 448 Cyber Security Technologies  
ITMT 430 Systems Integration |
| Apply current technical and mathematical concepts and practices in the core information technologies and recognize the need to engage in continuing professional development. | ITMD 411 Intermediate Software Development  
ITMD 421 Data Modeling & Applications  
ITMM 471 Project Management for ITM  
ITMO 440 Introduction to Data Networking & the Internet  
ITMT 430 Systems Integration |

3. Describe how the curriculum and its associated prerequisite structure support the attainment of the student outcomes:

Students start out with two introductory programming courses exposing them to different languages and development environments (ITM 311/ITM 312), leading to an intermediate level programming course (ITM 411); an introductory web development course (ITMD 361) leading to an HCI and web design course (ITMD 362); an introductory networking course (ITMO 440) leading to a cyber security technology course (ITMS 448); and additional courses adding breadth of knowledge (ITMD 421, ITMM 471, ITMO 456) leading to the capstone system integration course (ITMT 430).

As seen below, nearly all student outcomes are supported at varying required course levels with students building expertise as they progress. Note that the university-required interprofessional project courses contribute significantly to attainment of the outcomes. Outcome (j) is broken down into five outcomes for clarity.

<table>
<thead>
<tr>
<th>Student Outcomes</th>
<th>Required Courses Supporting the Outcome</th>
</tr>
</thead>
</table>
| (a) An ability to apply knowledge of computing and mathematics appropriate to the program’s student outcomes and to the discipline | ITM 311 Introduction to Software Development  
ITM 312 Introduction to Systems Software Programming  
ITMO 440 Introduction to Data Networking & the Internet  
ITMT 430 Systems Integration |
<table>
<thead>
<tr>
<th>Student Outcomes</th>
<th>Required Courses Supporting the Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>(b) An ability to analyze a problem, and identify and define the computing</td>
<td>ITM 100 Intro to Information Technology as a Profession</td>
</tr>
<tr>
<td>requirements appropriate to its solution</td>
<td>ITM 311 Introduction to Software Development</td>
</tr>
<tr>
<td></td>
<td>ITM 312 Introduction to Systems Software Programming</td>
</tr>
<tr>
<td></td>
<td>ITMD 361 Fundamentals of Web Development</td>
</tr>
<tr>
<td></td>
<td>ITMD 362 Human-Computer Interaction and Web Design</td>
</tr>
<tr>
<td></td>
<td>ITMD 411 Intermediate Software Development</td>
</tr>
<tr>
<td></td>
<td>ITMD 421 Data Modeling &amp; Applications</td>
</tr>
<tr>
<td></td>
<td>ITMO 440 Introduction to Data Networking &amp; the Internet</td>
</tr>
<tr>
<td></td>
<td>ITMS 448 Cyber Security Technologies</td>
</tr>
<tr>
<td></td>
<td>ITMT 430 Systems Integration</td>
</tr>
<tr>
<td>(c) An ability to design, implement, and evaluate a computer-based system,</td>
<td>ITM 100 Intro to Information Technology as a Profession</td>
</tr>
<tr>
<td>process, component, or program to meet desired needs</td>
<td>ITM 301 Intro to Contemp Operating Systems &amp; Hardware I</td>
</tr>
<tr>
<td></td>
<td>ITM 311 Introduction to Software Development</td>
</tr>
<tr>
<td></td>
<td>ITM 312 Introduction to Systems Software Programming</td>
</tr>
<tr>
<td></td>
<td>ITMD 361 Fundamentals of Web Development</td>
</tr>
<tr>
<td></td>
<td>ITMD 362 Human-Computer Interaction and Web Design</td>
</tr>
<tr>
<td></td>
<td>ITMD 411 Intermediate Software Development</td>
</tr>
<tr>
<td></td>
<td>ITMD 421 Data Modeling &amp; Applications</td>
</tr>
<tr>
<td></td>
<td>ITMO 440 Introduction to Data Networking &amp; the Internet</td>
</tr>
<tr>
<td></td>
<td>ITMO 456 Introduction to Open Source Operating Systems</td>
</tr>
<tr>
<td></td>
<td>ITMS 448 Cyber Security Technologies</td>
</tr>
<tr>
<td></td>
<td>ITMT 430 Systems Integration</td>
</tr>
<tr>
<td>(d) An ability to function effectively on teams to accomplish a common goal</td>
<td>ITM 100 Intro to Information Technology as a Profession</td>
</tr>
<tr>
<td></td>
<td>ITMD 362 Human-Computer Interaction and Web Design</td>
</tr>
<tr>
<td></td>
<td>ITMM 471 Project Management for ITM</td>
</tr>
<tr>
<td></td>
<td>ITMS 448 Cyber Security Technologies</td>
</tr>
<tr>
<td></td>
<td>ITMT 430 Systems Integration</td>
</tr>
<tr>
<td></td>
<td>IPRO 397/497 Interprofessional Project</td>
</tr>
<tr>
<td>(e) An understanding of professional, ethical, legal, security and social</td>
<td>ITM 100 Intro to Information Technology as a Profession</td>
</tr>
<tr>
<td>issues and responsibilities</td>
<td>ITM 301 Intro to Contemp Operating Systems &amp; Hardware I</td>
</tr>
<tr>
<td></td>
<td>ITMD 362 Human-Computer Interaction and Web Design</td>
</tr>
<tr>
<td></td>
<td>ITMD 421 Data Modeling &amp; Applications</td>
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<td></td>
<td>ITMM 471 Project Management for ITM</td>
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<td></td>
<td>ITMO 456 Introduction to Open Source Operating Systems</td>
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<td></td>
<td>ITMS 448 Cyber Security Technologies</td>
</tr>
<tr>
<td></td>
<td>ITMT 430 Systems Integration</td>
</tr>
<tr>
<td></td>
<td>IPRO 397/497 Interprofessional Project</td>
</tr>
<tr>
<td>Student Outcomes</td>
<td>Required Courses Supporting the Outcome</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>(f) An ability to communicate effectively with a range of audiences</td>
<td>ITM 100 Intro to Information Technology as a Profession&lt;br&gt;ITMD 361 Fundamentals of Web Development&lt;br&gt;ITM 362 Human-Computer Interaction and Web Design&lt;br&gt;ITMM 471 Project Management for ITM&lt;br&gt;ITMS 448 Cyber Security Technologies&lt;br&gt;IPRO 397/497 Interprofessional Project</td>
</tr>
<tr>
<td>(g) An ability to analyze the local and global impact of computing on individuals, organizations, and society</td>
<td>ITM 100 Intro to Information Technology as a Profession&lt;br&gt;ITMT 430 Systems Integration&lt;br&gt;IPRO 397/497 Interprofessional Project</td>
</tr>
<tr>
<td>(h) Recognition of the need for and an ability to engage in continuing professional development</td>
<td>ITM 100 Intro to Information Technology as a Profession&lt;br&gt;ITM 301 Intro to Contemp Operating Systems &amp; Hardware I&lt;br&gt;ITM 311 Introduction to Software Development&lt;br&gt;ITMD 411 Intermediate Software Development&lt;br&gt;ITMD 421 Data Modeling &amp; Applications&lt;br&gt;ITMM 471 Project Management for ITM&lt;br&gt;ITMO 440 Introduction to Data Networking &amp; the Internet&lt;br&gt;ITMT 430 Systems Integration&lt;br&gt;IPRO 397/497 Interprofessional Project</td>
</tr>
<tr>
<td>(i) An ability to use current techniques, skills, and tools necessary for computing practice.</td>
<td>ITM 301 Intro to Contemp Operating Systems &amp; Hardware I&lt;br&gt;ITM 311 Introduction to Software Development&lt;br&gt;ITM 312 Introduction to Systems Software Programming&lt;br&gt;ITMD 361 Fundamentals of Web Development&lt;br&gt;ITMD 411 Intermediate Software Development&lt;br&gt;ITMD 421 Data Modeling &amp; Applications&lt;br&gt;ITMO 440 Introduction to Data Networking &amp; the Internet&lt;br&gt;ITMO 456 Introduction to Open Source Operating Systems&lt;br&gt;ITMS 448 Cyber Security Technologies&lt;br&gt;ITMT 430 Systems Integration</td>
</tr>
<tr>
<td>(j)(1) An ability to use and apply current technical concepts and practices in the core information technology of human computer interaction</td>
<td>ITMD 362 Human-Computer Interaction and Web Design&lt;br&gt;ITMT 430 Systems Integration</td>
</tr>
<tr>
<td>(j)(2) An ability to use and apply current technical concepts and practices in the core information technology of information management.</td>
<td>ITMD 421 Data Modeling &amp; Applications&lt;br&gt;ITMT 430 Systems Integration</td>
</tr>
<tr>
<td>(j)(3) An ability to use and apply current technical concepts and practices in the core information technology of programming.</td>
<td>ITM 311 Introduction to Software Development&lt;br&gt;ITM 312 Introduction to Systems Software Programming&lt;br&gt;ITMD 411 Intermediate Software Development&lt;br&gt;ITMT 430 Systems Integration</td>
</tr>
<tr>
<td>Student Outcomes</td>
<td>Required Courses Supporting the Outcome</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| (j)(4) An ability to use and apply current technical concepts and practices in the core information technology of *networking*. | ITMO 440  Introduction to Data Networking & the Internet  
ITMO 456  Introduction to Open Source Operating Systems  
ITMT 430  Systems Integration |
| (j)(5) An ability to use and apply current technical concepts and practices in the core information technology of *web systems and technologies*. | ITMD 361  Fundamentals of Web Development  
ITMD 362  Human-Computer Interaction and Web Design  
ITMT 430  Systems Integration |
| (k) An ability to identify and analyze user needs and take them into account in the selection, creation, evaluation and administration of computer-based systems. | ITM 100  Intro to Information Technology as a Profession  
ITM 311  Introduction to Software Development  
ITMD 362  Human-Computer Interaction and Web Design  
ITMD 411  Intermediate Software Development  
ITMD 421  Data Modeling & Applications  
ITMM 471  Project Management for ITM  
ITMO 440  Introduction to Data Networking & the Internet  
ITMO 456  Introduction to Open Source Operating Systems  
ITMT 430  Systems Integration |
| (l) An ability to effectively integrate IT-based solutions into the user environment. | ITM 100  Intro to Information Technology as a Profession  
ITM 301  Intro to Contemp Operating Systems & Hardware I  
ITMD 362  Human-Computer Interaction and Web Design  
ITMT 430  Systems Integration |
| (m) An understanding of best practices and standards and their application.         | ITM 301  Intro to Contemp Operating Systems & Hardware I  
ITM 311  Introduction to Software Development  
ITM 312  Introduction to Systems Software Programming  
ITMD 361  Fundamentals of Web Development  
ITMD 362  Human-Computer Interaction and Web Design  
ITMD 411  Intermediate Software Development  
ITMD 421  Data Modeling & Applications  
ITMM 471  Project Management for ITM  
ITMO 456  Introduction to Open Source Operating Systems  
ITMS 448  Cyber Security Technologies  
ITMT 430  Systems Integration |
| (n) An ability to assist in the creation of an effective project plan.               | ITM 100  Intro to Information Technology as a Profession  
ITMM 471  Project Management for ITM  
ITMS 448  Cyber Security Technologies  
ITMT 430  Systems Integration  
IPRO 397/497  Interprofessional Project |

3. A flowchart or worksheet that illustrates the prerequisite structure of the program’s required courses is on the next page following.
ITM Communication Courses
These courses contain a communication component (denoted with a “C”). As required by the IIT Common Core (general education), each department is required to have 15 credit hours in major courses that are “C” courses. Communication content is periodically reviewed by the Communication Across the Curriculum office. The Communication courses in Information Technology and Management include:

**Required Courses**
- ITM 100 Intro to Information Technology as a Profession
- ITMD 361 Fundamentals of Web Development
- ITMM 471 Project Management for ITM
- ITMS 448 Cyber Security Technologies

**Elective Courses**
- ITMD 422 Advanced Database Management
- ITMD 460 Fundamentals of Multimedia
- ITMD 462 Web Site Application Development
- ITMM 485 Legal & Ethical Issues in Information Technology
- ITMS 478 Cyber Security Management
4. EAC Criteria: Not applicable

5. CAC Curriculum Criteria for Information Technology (5.a. and b.)
How our program meets the CAC Criteria requirements in terms of hours and depth of study for each curricular area specifically addressed by either the CAC general criteria or the applicable program criteria.

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Area</th>
<th>Required Courses Meeting the Criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.</td>
<td></td>
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</tr>
<tr>
<td>5.a.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.a.1-1</td>
<td>human computer interaction</td>
<td>ITMD 362 Human-Computer Interaction and Web Design (3 hours)</td>
</tr>
<tr>
<td>5.a.1-2</td>
<td>information management</td>
<td>ITMD 421 Data Modeling &amp; Applications (3 hours)</td>
</tr>
<tr>
<td>5.a.1-3</td>
<td>programming</td>
<td>ITM 311 Intro to Software Development (3 hours)</td>
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<tr>
<td></td>
<td></td>
<td>ITM 312 Intro to Systems Software Programming (3 hours)</td>
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<tr>
<td>5.a.1-4</td>
<td>networking</td>
<td>ITMO 440 Intro to Data Networking &amp; the Internet (3 hours)</td>
</tr>
<tr>
<td>5.a.1-5</td>
<td>web systems &amp; technologies</td>
<td>ITMD 361 Fundamentals of Web Development (3 hours)</td>
</tr>
<tr>
<td>5.a.2</td>
<td>information assurance &amp; security</td>
<td>ITMS 448 Cyber Security Technologies (3 hours)</td>
</tr>
<tr>
<td>5.a.3</td>
<td>system administration and maintenance</td>
<td>ITM 301 Intro to Contemp Operating Systems &amp; Hardware (3 hrs)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ITMO 456 Introduction to Open Source Operating Systems (3 hrs)</td>
</tr>
<tr>
<td>5.a.4</td>
<td>system integration and system architecture</td>
<td>ITM 100 Intro to Information Technology as a Profession (3 hours)</td>
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<tr>
<td></td>
<td></td>
<td>ITMT 430 Systems Integration (3 hours)</td>
</tr>
<tr>
<td>5.b.</td>
<td>Advanced course work that builds on the fundamental course work to provide depth</td>
<td>ITMD 362 Human-Computer Interaction and Web Design (3 hours)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ITMD 411 Intermediate Software Development (3 hours)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ITMM 471 Project Management for ITM (3 hours)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ITMT 430 Systems Integration (3 hours)</td>
</tr>
</tbody>
</table>

6. Describe the major design experience that prepares students for engineering practice: Not applicable

7. Cooperative education: IIT does not allow cooperative education in satisfaction of curricular requirements.

8. Materials (course syllabi, textbooks, sample student work, etc.), that will be available for review during the visit to demonstrate achievement related to this criterion:

- All syllabi from Spring and Fall 2015
- Representative graded student exams/projects from Fall 2014/Spring 2015 ITM courses
- Graduating Senior Survey Results
- ITM specific course evaluation sample and tabulation
- Final exam data tabulation results
- Classroom Visit Observation Form and Spring 2015 semester results

**B. Course Syllabi**

See Appendix A.
CRITERION 6. FACULTY

A. Faculty Qualifications
Every tenured faculty member holds a Ph.D. Every Industry and Adjunct Industry faculty member holds at least Master’s degree, and in many cases two or three Master’s degree, or a Ph.D. Every faculty member from the Dean on down has industry experience, and Industry faculty ranks are assigned based on demonstrated mastery of subject areas through industry experience. The ITM Faculty Handbook, which is currently in revision and will be provided during the site visit, includes criteria for academic ranks. Given the nature of the field of information technology, the industry experience of our faculty is a tremendous strength and a direct benefit to our students. When we begin to hire tenure-track faculty, we will continue to seek candidates who have this experience in addition to their earned doctorate.

B. Faculty Workload
The standard teaching load for full-time faculty is three courses with up to four classroom sections each semester. Faculty with administrative responsibilities such as the associate chair and laboratory directors each teach two courses per semester, and the chair teaches one course per term. University policy dictates that adjunct faculty may only teach two courses per semester but may teach up to four separate classroom sections, and adjunct faculty members who are full-time university staff members normally may only teach one course each semester. Exceptions to policy are made on occasion allowing regular adjunct faculty members to teach up to three courses and university staff adjunct faculty member to teach two courses. Graduate and undergraduate sections are combined in common lecture sections in some courses as well, but we are gradually moving away from this model as faculty resources allow. Graduate student are no longer allowed to enroll in undergraduate sections of any courses offered in our department, although allowing graduate students to enroll in 400-level sections continues to be common throughout the rest of the university.

Enrollment limits for courses are tailored on needs of the department and demonstrated ability of faculty members to handle sections with very large enrollments. Some very knowledgeable and experienced faculty have proven not to do well teaching sections with very large enrollments and we schedule them accordingly.

Many courses have online as well as classroom sections, and in some cases the number of online students will exceed the number of students in the live classroom. This requires faculty to make optimal use of teaching assistants and the of the Blackboard learning management system (LMS). There may be as many as three online sections; one for local online students, one as part of IIT’s India International program, and one for traditional distance learning students.

C. Faculty Size
The size of the full time faculty at six members is adequate and is comparable to similar programs at other institutions. Given both the breadth and the depth of our academic offerings, with as many as forty-five to fifty courses running each term, some with multiple lecture sections, we have been increasing the size of our adjunct faculty. We had eighteen teaching in fall of 2014, twenty teaching in spring of 2015, and twenty-five planned for fall of 2015. Not every adjunct faculty member teaches every semester, and there are normally twenty-two to
twenty-four associated with the department at any given time, increasing to twenty-eight this fall. If new student enrollment continues to grow at our present rate of nearly 30% each fall, we do estimate that we will need additional full time faculty to handle the additional teaching load, probably one additional full-time faculty member each year for the next five years.

**Faculty Involvement – Student Interaction**

All faculty are required to have a reasonable number of office hours depending upon the size of the class, usually 2-4 office hours per week, and also must promptly reply to e-mail messages, which is generally defined as within 24 hours.

There are also social interactions available for students and faculty such as the School of Applied Technology (SAT) picnic, new student breakfast, and SAT evening events such as parties, game nights, and movie nights.

**Faculty Involvement – Advising**

Professors Trygstad and Hajek handle all undergraduate advising. This is discussed in depth in Criterion 1.D. above.

**Faculty Involvement – Program Oversight**

Curricular design is based on feedback from students and alumni, industry input through interaction with the School of Applied Technology Board of Visitors and participation in I.T. industry events, trends in seen in both industry and academic press, and contributions and counsel from adjunct faculty members who work full time in the industry. Curricular decisions are made by the Curriculum Committee, which consists of three full-time and three adjunct faculty members, with participation open to all full-time faculty members. The Committee engages a constant review of the program to ensure that is comprehensive, academically sound, and meeting the needs of the students as a pre-professional educational program. Any faculty member may propose curriculum revisions which are then considered and acted upon by the Committee.

A subcommittee of the Curriculum Committee, the Curriculum Oversight Committee, have been making made unannounced class visits to validate that the course is following syllabus timelines, to assess whether or not the instructor is teaching to the course objectives, and to observe student engagement. Additionally, these visits serve as a tool to assess teaching style, course design, and the validity of course materials.

Faculty members are encouraged to propose new courses. In most cases the department will judge student interest and course effectiveness though an offering of the proposed course as an appropriate “topics” course in the applicable subject area.

**D. Professional Development**

There are many on campus teaching and advising seminars that are funded by the college or provost’s office and are available to all faculty. In addition, many faculty members regularly participate in I.T. industry activities and professional organizations such as USENIX, AITP, the Illinois Technology Foundation, the Illinois Technology Association and the Technology Executives Club.
E. Authority and Responsibility of Faculty

New courses can be proposed to the ITM Curriculum Committee by any faculty member, or through suggestions from the SAT Board of Visitors, and are sometimes are initially offered as one of our sever topics courses, ITMD 419 Topics in Software Development, ITMD 469 Topics in Application Development, ITMS 479 Topics in Information Security, or as our general ITMT 495 Topics in Information Technology. A course syllabus is required to propose a course including course outcomes and relation to student outcomes and program educational objectives. Once a course shows good enrollment as well as good student evaluations, the Curriculum Committee can approve the new course to be adopted into the general curriculum, the course is assigned a permanent course number.

The ITM Curriculum Committee, in concert with the faculty and course coordinators, is responsible for evaluating the consistency and quality of the courses, their support of student outcomes and program educational objectives, and modifying the curriculum when necessary.

The ITM Curriculum Committee has the responsibility to define and revise student outcomes and program educational objectives, with input from ABET, the SAG Board of Visitors, and the School of Applied Technology and IIT strategic plans. The ITM Curriculum Committee has the responsibility to ensure students are obtaining student outcomes and program educational objectives, and has the ability to change courses and curriculum if necessary.

Any course changes need approval by the ITM Curriculum Committee, the Department Chair, and the Dean of the School of Applied Technology. Major curriculum changes need approval by the ITM Curriculum Committee, the ITM faculty, the IIT Undergraduate Studies Committee and the IIT Faculty Council. Any student outcome or program objective changes need approval by the ITM Curriculum Committee.
## Table 6-1. Faculty Qualifications

Department of Information Technology and Management, Illinois Institute of Technology

<table>
<thead>
<tr>
<th>Faculty Name</th>
<th>Highest Degree Earned- Field and Year</th>
<th>Rank</th>
<th>Type of Academic Appointment</th>
<th>Years of Experience</th>
<th>Professional Registration/Certification</th>
<th>Level of Activity</th>
<th>Consulting/summer work in industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Omar Aldawud</td>
<td>Ph.D. - Computer Science, 2002</td>
<td>A</td>
<td>NTT PT</td>
<td>20 13 2</td>
<td>N/A</td>
<td>H</td>
<td>H L</td>
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<tr>
<td>Adarsh Arora</td>
<td>Ph.D. - Computer Science, 1978</td>
<td>A</td>
<td>NTT PT</td>
<td>27 4 1</td>
<td>N/A</td>
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<td>H H</td>
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<tr>
<td>Brian Bailey</td>
<td>Master - Information Technology &amp; Management, 2014</td>
<td>A</td>
<td>NTT PT</td>
<td>18 3 3</td>
<td>N/A</td>
<td>L</td>
<td>M M</td>
</tr>
<tr>
<td>Carl Carlson</td>
<td>Ph.D. - Computer Science, 1972</td>
<td>P</td>
<td>T FT</td>
<td>7 38 3</td>
<td>ACM</td>
<td>H</td>
<td>H H</td>
</tr>
<tr>
<td>Carol Davids</td>
<td>Master - Information Technology &amp; Management, 2003</td>
<td>P</td>
<td>NTT FT</td>
<td>46 13 13</td>
<td>ACM IEEE</td>
<td>L</td>
<td>H L</td>
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<tr>
<td>Shawn Davis</td>
<td>Masters - Information Technology &amp; Management, Specialization (Computer and Network Security) - 2012</td>
<td>A</td>
<td>NTT PT</td>
<td>8.5 1 1</td>
<td>GWAPT GCFE GCIH Security+ Network+ A+ FCC GIAC</td>
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<td>H L</td>
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<tr>
<td>Madeleine England</td>
<td>Master - Information Technology &amp; Management, (IT Management &amp; Entrepreneurship), 2012</td>
<td>A</td>
<td>NTT PT</td>
<td>17 3 3</td>
<td>N/A</td>
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<td>H L</td>
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<tr>
<td>Bonnie Goins</td>
<td>M.S. - Information Science, 1996</td>
<td>A</td>
<td>NTT PT</td>
<td>30 11 8</td>
<td>CISSP BVQI CBCP CGEIT CRISC CISA CISM ITIL MBCI NSA PCIP</td>
<td>M</td>
<td>H H</td>
</tr>
<tr>
<td>Jeremy Hajek</td>
<td>Master - Information Technology &amp; Management, 2007</td>
<td>P</td>
<td>NTT FT</td>
<td>10 6 10</td>
<td>N/A</td>
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<td>M L</td>
</tr>
<tr>
<td>Dennis Hood</td>
<td>M.S. - Computer Science, 1992</td>
<td>A</td>
<td>NTT PT</td>
<td>17 11 11</td>
<td>ACM</td>
<td>L</td>
<td>M L</td>
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<tr>
<td>Faculty Name</td>
<td>Highest Degree Earned - Field and Year</td>
<td>Rank</td>
<td>Type of Academic Appointment</td>
<td>Years of Experience</td>
<td>Professional Registration/Certification</td>
<td>Level of Activity</td>
<td>Consulting/summer work in industry</td>
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<tr>
<td>Peisong Huang</td>
<td>M.Phil. – Software Engineering, 1993</td>
<td>A</td>
<td>NTT, PT</td>
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<td>N/A</td>
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<td>M, M</td>
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<tr>
<td>Sean Hughes-Durkin</td>
<td>Masters - Information Technology &amp; Management, Specialization (Computer and Network Security), 2010</td>
<td>A</td>
<td>NTT, PT</td>
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<td>Security+</td>
<td>H</td>
<td>H, H</td>
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<tr>
<td>Sharan Kalwani</td>
<td>Master - Computer Science, 1987</td>
<td>A</td>
<td>NTT, PT</td>
<td>28</td>
<td>IEEE, ACM, USENIX, ITIL, PMP</td>
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<tr>
<td>Jason Lambert</td>
<td>M.S. – Computer Graphics Technology, 2010</td>
<td>A</td>
<td>NTT, PT</td>
<td>7</td>
<td>N/A</td>
<td>M</td>
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<tr>
<td>Steven Lisitza</td>
<td>Master - Information Technology &amp; Management, 2014</td>
<td>A</td>
<td>NTT, PT</td>
<td>29</td>
<td>EMCISA, EMCCIS</td>
<td>M</td>
<td>M</td>
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<tr>
<td>Louis F. McHugh IV</td>
<td>Master - Cyber Forensics and Security, est. 2015 M.S. - Information Systems and Technology, 2010</td>
<td>A</td>
<td>NTT, PT</td>
<td>10</td>
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<tr>
<td>Bruce Mueller</td>
<td>M.B.A - 1974</td>
<td>A</td>
<td>NTT, PT</td>
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<td>N/A</td>
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<td>Faculty Name</td>
<td>Highest Degree Earned- Field and Year</td>
<td>Rank ¹</td>
<td>Type of Academic Appointment ²</td>
<td>FT or PT ³</td>
<td>Years of Experience</td>
<td>Professional Registration/ Certification</td>
<td>Level of Activity ⁴ H, M, or L Professional Organizations Professional Development Consulting/summer work in industry</td>
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<tr>
<td>Scott Spyrison</td>
<td>Master - Information Technology &amp; Management, 2013</td>
<td>A</td>
<td>NTT</td>
<td>PT</td>
<td>15 2 2</td>
<td>N/A</td>
<td>L</td>
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<tr>
<td>Raymond Trygstad</td>
<td>M.S. - Systems Management, (Information Systems Management) 1990</td>
<td>P</td>
<td>NTT</td>
<td>FT</td>
<td>27 26 14</td>
<td>iNet+ ACM AITP ISACA</td>
<td>M</td>
</tr>
<tr>
<td>Kevin Vaccaro</td>
<td>Master - Information Technology &amp; Management, 2006</td>
<td>A</td>
<td>NTT</td>
<td>PT</td>
<td>20 19 9</td>
<td>CEH v.8 FTK MPE Net+ A+ Security+ IEEE</td>
<td>M</td>
</tr>
</tbody>
</table>

Instructions: Complete table for each member of the faculty in the program. Add additional rows or use additional sheets if necessary. Updated information is to be provided at the time of the visit.

1. Code: P = Professor ASC = Associate Professor AST = Assistant Professor I = Instructor A = Adjunct O = Other
2. Code: TT = Tenure Track T = Tenured NTT = Non Tenure Track
3. At the institution
4. The level of activity, high, medium or low, should reflect an average over the year prior to the visit plus the two previous years.
Table 6-2. Faculty Workload Summary

Department of Information Technology and Management, Illinois Institute of Technology

<table>
<thead>
<tr>
<th>Faculty Member (name)</th>
<th>Program Activity Distribution</th>
<th>% of Time Devoted to the Program</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Teaching</td>
<td>Research or Scholarship</td>
</tr>
<tr>
<td>Omar Aldawud</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>Adarsh Arora</td>
<td>50</td>
<td>0</td>
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<tr>
<td>Brian Bailey</td>
<td>90</td>
<td>0</td>
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<tr>
<td>Carl Carlson</td>
<td>30</td>
<td>20</td>
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<tr>
<td>Carol Davids</td>
<td>40</td>
<td>30</td>
</tr>
<tr>
<td>Shawn Davis</td>
<td>90</td>
<td>10</td>
</tr>
<tr>
<td>Madeleine England</td>
<td>60</td>
<td>10</td>
</tr>
<tr>
<td>Bonnie Goins</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>Faculty Member (name)</td>
<td>PT or FT¹</td>
<td>Classes Taught (Course No./Credit Hrs.) Term and Year²</td>
</tr>
<tr>
<td>----------------------</td>
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<tr>
<td>Jeremy Hajek</td>
<td>FT</td>
<td>Fall 2014: ITMO 444/544 (3 credit) ITMT 492/593 (3 credit) ITMO 456 (3 credit) Spring 2015: ITMO 450/550 (3 credit) ITMO 456 (3 credit) ITMO 492/593 (3 credit)</td>
</tr>
<tr>
<td>Dennis Hood</td>
<td>PT</td>
<td>Summer 2014: ITMM 471/571 (3 credit) Fall 2014: ITMM 471/571 (3 credit) ITMM 572 (3 credit) Spring 2015: ITMM 471 (3 credit)</td>
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<tr>
<td>Peisong Huang</td>
<td>PT</td>
<td>Fall 2014: ITMD311 (3 credit) ITMD455/555 (3 credit) Spring 2015: ITMD311 (3 credit) ITMD455/555 (3 credit)</td>
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<tr>
<td>Sean Hughes-Durkin</td>
<td>PT</td>
<td>Fall 2014: ITMO 456 (3 credit) Spring 2015: ITMO 456 (3 credit) ITMS 458/558 (3 credit)</td>
</tr>
<tr>
<td>Alan Johnston</td>
<td>PT</td>
<td>Spring 2015: ITMD 545 (3 credit)</td>
</tr>
<tr>
<td>Sharan Kalwani</td>
<td>PT</td>
<td>Spring 2015: ITMD 469/569 (3 credit)</td>
</tr>
<tr>
<td>Raj Krishnan</td>
<td>PT</td>
<td>Fall 2014: ITMD 463/563 (3 credit) Spring 2015: ITMD 464/564 (3 credit)</td>
</tr>
<tr>
<td>Jason Lambert</td>
<td>PT</td>
<td>Fall 2014: ITMD 462/562 (3 credit) Spring 2015: ITMD 465/565 (3 credit)</td>
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<tr>
<td>William Lidinsky</td>
<td>FT</td>
<td>Fall 2014: ITMS 448/548 (3 credit) ITMS 555 (3 credit) ITMS 597 (1-3 credit) Spring 2015: ITMS 538 (3 credit) ITMS 539 (3 credit) ITMS 549 (3 credit) ITMS 597 (1-3 credit)</td>
</tr>
<tr>
<td>Steven Lisitza</td>
<td>PT</td>
<td>Fall 2014: ITM 557 (3 credit)</td>
</tr>
<tr>
<td>Louis F. McHugh IV</td>
<td>PT</td>
<td>Summer 2014: ITMO 440/540 (3 credit) Fall 2014: ITM 301 (3 credit) ITMT 597 (1-3 credit) Spring 2015: ITMO 454/554 (3 credit) ITMT 597 (1-3 credit)</td>
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<tr>
<td>Bruce Mueller</td>
<td>PT</td>
<td></td>
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<tr>
<td>Faculty Member (name)</td>
<td>PT or FT</td>
<td>Classes Taught (Course No./Credit Hrs.) Term and Year</td>
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<tr>
<td>James Papademas</td>
<td>FT</td>
<td>Summer 2014: ITMD 413/513 (3 credit) Fall 2014: ITM 312 (3 credit) ITMD 411 (3 credit) Spring 2015: ITM 311 (3 credit) ITMD 411 (3 credit) ITMD 455/555 (3 credit)</td>
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<tr>
<td>Katherine Papademas</td>
<td>PT</td>
<td>Spring 2015: ITMD 421 (3 credit)</td>
</tr>
<tr>
<td>Luke Papademas</td>
<td>PT</td>
<td>Fall 2014: ITMD 411 (3 credit) ITMD 421 (3 credit) Spring 2015: ITMD 434/534 (3 credit) ITMD: 523(3 credit)</td>
</tr>
<tr>
<td>Martin Schray</td>
<td>PT</td>
<td>Fall 2014: ITMD 455/555 (3 credit)</td>
</tr>
<tr>
<td>Sheikh Shamsuddin</td>
<td>PT</td>
<td>Summer 2014: ITM311 (3 credit) Fall 2014: ITM 311 (3 credit) ITMO 417/517 (3 credit) Spring 2015: ITMO 433/533 (3 credit)</td>
</tr>
<tr>
<td>William Slater III</td>
<td>PT</td>
<td>Fall 2014 : ITM 301 (3 credit) Spring 2015: ITMM 571 (3 credit) ITMM 576 (3 credit)</td>
</tr>
<tr>
<td>Scott Spyrison</td>
<td>PT</td>
<td>Fall 2014: ITMD 415/515 (3 credit) Spring 2015: ITMD 415/515 (3 credit) ITMD 510 (3 credit)</td>
</tr>
<tr>
<td>Raymond Trygstad</td>
<td>FT</td>
<td>Summer 2014: ITMO 456 (3 credit) ITMT 491 (1-3 credit) Fall 2014: ITMD 460 (3 credit) ITMS 478/578 (3 credit) ITMT 597 (1-3 credit) Spring 2015: ITM 100 (2 credit) ITMM 485/585 (3 credit) ITMD 556 (3 credit)</td>
</tr>
<tr>
<td>Kevin Vaccaro</td>
<td>PT</td>
<td>Fall 2014: ITMS 443/543 (3 credit) Spring 2015: ITMO 441/541 (3 credit)</td>
</tr>
</tbody>
</table>

1. FT = Full Time Faculty or PT = Part Time Faculty, at the institution
2. For the academic year for which the Self-Study Report is being prepared.
3. Program activity distribution should be in percent of effort in the program and should total 100%.
4. Indicate sabbatical leave, etc., under "Other."
5. Out of the total time employed at the institution.
CRITERION 7. FACILITIES

A. Offices, Classrooms and Laboratories

Offices
Most full-time tenure and non-tenure track ITM faculty have their own offices allowing them to hold office hours for student questions or advising. All other ITM faculty have a shared office environment where they can hold office hours on the days of their courses at both the Main and Rice Campus.

Full-time ITM faculty have laptops, PCs, or workstations in their offices, access to computer classrooms, a high-speed black and white printer and a high-speed color printer in the department office, and access to laptops and projectors for use in classroom lectures or presentations. All ITM faculty have opportunities to record lectures or presentations for scholarly conferences using IIT Online. IIT Online offers instructional design services, which entail creating materials to assist in faculty course development. These design services include adding media to classroom instruction and producing sound pedagogical content. All faculty have access to channels in the university portal site, myIIT, for accessing their own class data, such as their class schedules and grading, and for advising students. Blackboard learning management software is available in myIIT. Blackboard accounts for faculty and students are created 4-5 weeks before the semester starts. Teaching assistants can be given access by the course instructor. Faculty members can request computer lab use for academic instruction through the university’s primary computing organization, the Office of Technology Services (OTS), or through the School of Applied Technology (SAT) at both Main and Rice Campuses.

Administrative staff in the ITM Department are also provided offices (or shared offices) and computers in the main office, and provide 9am-5pm coverage for student inquiries. Printers, copiers, fax machine and office supplies are available.

Academic Buildings
All academic buildings are fully equipped with 1Gbps network connectivity to the IIT backbone. Individual wired connections provide a minimum of 100Mbps connectivity with many having 1Gbps connections. All academic buildings have full wireless network connectivity at 54Mbps. All network infrastructure is protected via uninterruptable power supplies and are secured to prevent unauthorized access.

From 2008 to 2013, OTS upgraded the network services to the academic buildings as follows:
- Upgraded internet bandwidth to >2Gbps
  - 2008: 200Mbps
  - 2010: 300Mbps
  - 2010: 500Mbps
  - 2012: 1Gbps
  - 2013: 2Gbps
- Added a backup internet provider for redundancy
- Added a co-location presence in a Level(3) datacenter

1 Include information concerning facilities at all sites where program courses are delivered.
• Added an additional 1Gbps link to the Internet2 via the Chicago Starlight Facility on the Northwestern University Campus
• Upgraded wireless access, including:
  o 802.11n wireless access
  o Encrypted access
  o Joined and deployed ‘Eduroam’ to allow visiting faculty, students and researchers to have access to the IIT network as well as other institution networks when traveling
• Implemented IPv6 for all wired connections and externally via BGP
• Deployed IDS/IPS
• Added redundant connections to IIT’s other campuses located in Downtown Chicago, Wheaton, and Bedford Park.
• Connected the last IIT remote Campus, ID, to IIT Metropolitan infrastructure.
• Added redundant fiber connections on the main campus to complete the campus fiber ring reducing the possibility of an outage.
• Increased the throughput of IIT network connectivity to 10 Gbps.
• Implemented the next generation of hardware in IIT Data Centers that will support Openflow

Classrooms
IIT provides three types of classroom technologies: Standard AV equipped, online learning, and computer classrooms. All three types of rooms offer projection and audio systems that include a document camera, Blue Ray player, and connections for an instructor provided laptop computer or tablet. Some rooms also include DVD/VCR combinations for handling legacy technologies. All equipment is controlled from a Crestron touch-panel controller that is standardized across all IIT classrooms to insure a seamless interface for the instructors regardless of the room. These rooms are scheduled and managed by the Office of the Registrar.

The online learning rooms add remote controlled cameras, microphones, and confidence monitors that interact with Crestron HD Capture devices to record the instructor’s presentation. These rooms are controlled remotely by Production Assistants who handle the cameras and in insure the quality of the recording. Several rooms offer the capability to connect to IIT’s video conferencing system to allow real-time collaboration and interaction with guest speakers. These rooms are scheduled and managed by IIT Online.

The third type of classrooms are the PC classroom. These PC classrooms are computer labs equipped with a PC and projector for the instructor and individual computers for each student. This arrangement provides students with a hands-on learning experience. Recent upgrades include:
  • 10 online learning rooms with lecture capture in the Stuart Building
  • 5 online learning rooms with lecture capture in the E1 Building
  • Upgraded 10 rooms in the Stuart Building and 18 rooms in E1 to HDMI connections
  • Replaced projectors in Stuart, E1, Siegel, IIT Tower and Tech Central buildings
  • Installed a new smart podium in the Siegel Hall auditorium
  • Installed complete AV systems in the IIT Tower auditorium, IIT Tower 6th floor classrooms, and Tech Central classrooms.
These rooms are scheduled by the Office of the Registrar and managed by OTS.
**School of Applied Technology Computer Laboratories**

SAT operates and supports 12 computer labs between the Main and Rice campuses; all are usually available from 9am until 10pm. The labs are managed internally by full-time staff to provide a highly agile environment based on the ever-changing technology needs of our students and classes. Most labs are equipped with reconfigurable workstations which allow staff to swap hard drives in 10 minutes or less to support specific instructional scenarios.

- Main campus has 5 labs with 60 workstations on a three year replacement cycle.
- The Rice Campus 7 labs with 90 workstations on a three year replacement cycle.

Additionally, SAT has an enterprise grade VMware farm with a SAN that supports a number of classroom functions and student projects. The VMware farm will accommodate about 300 virtual machines.

**School of Applied Technology Provided Software**

SAT technical services offers all of the following current software titles that specifically address ITM student needs.

- Microsoft Dreamspark Premium membership for all currently enrolled students and faculty. Providing 192 individual the files include all current Microsoft operating systems, servers, and application development tools, and include applications such as Windows 7, Windows 8.1, Windows 10, and Visual Studio.
- VMware software providing 21 different titles including VMware Workstation, ESXi, VCenter for example.
- Oracle Software—the ITM Department is an Oracle Academy member through a grant directly from Oracle. This grant provides our students and faculty with a number of different software, curriculum, training, and certification resources from Oracle.

These titles are reviewed every semester by the ITM IT Advisory Committee, and are updated after thorough testing for compatibility with existing lab hardware/software every summer.

**Cyber Forensics and Security Laboratory (ForSec Lab)**

This PC classroom located at the Rice Campus is equipped with a PC and projector for the instructor and individual computers with reconfigurable hard drives for each student. The lab provides students and research partners the opportunity to develop hands-on expertise working in the field of security, forensics, and disaster/data recovery. The ForSec Lab is built and configured to support the needs of multiple computer, network, and forensic projects.

**ForSec Lab Computing Resources and Software**

The Cyber Forensics and Security Lab provides a sandboxed environment where traffic throughout a network can be analyzed and filtered. Cyber intrusions and virus spread can be studied, as well as Malware and Spyware can be tested on multiple platforms. Equipment is easily introduced into several potential network configurations.

The Lab is equipped with multiple forensic workstations targeted to be compliant with National Institute of Standards and Technology (NIST) standards, and equipped to investigate multiple interface media.

25 PCs that can be booted into either Windows 8.1 or Kali Linux are loaded with a full complement of Forensics and teaching software including Matlab, WinHex, EnCase, and
ProDiscover Basic among others. The machines are re-imaged on semester basis to apply software updates. Student’s credentials to access these desktops are managed by ForSecLab staff and are independent from the IIT’s web portal. This gives the ForSecLab a better control on account privileges. There is an HP LaserJet 400 color M451 that can be used for printing in the lab.

ForSec Lab RADISH
Remote-Accessible Dynamic Infrastructure for Students to Hack (RADISH) allows class members in ITM cyber security curricula to have full, unrestricted access to ForSec Lab resources from any location and from nearly any Internet connected device. RADISH enables 24/7 access so students may work on their projects continuously with no logistic concern.

RADISH was designed and developed by Illinois Tech faculty and student lab staff as part of the Cyber Forensics and Security Laboratory (ForSec Lab). Students had a hands-on experience building a sophisticated computer infrastructure they would later use in the classroom. The RADISH infrastructure was developed and continually improved upon; and over time, RADISH became the infrastructure of the ForSec Lab due to its uniqueness, reliability, and accessibility.

RADISH’s tested reliability and virtual capability improves students’ research, and lab work since new ideas can be tested from remote computer devices at any time. Currently RADISH supports three courses per semester as well as multiple student projects. By creating a laboratory with the latest in advanced technology and software, students are able to become more involved in their classwork.

RADISH was developed in 2010 as a replacement for portable hard disk drives (HDDs) that were prepared with several pre-configured virtual machines (VMs) and distributed to students to complete in-class laboratories and home exercises. By attaching these HDDs to computers, students were able to determine information based on the structure of the HDDs. The physical existence aspect of the class was completely eliminated by this new system. Classes became 100% virtualized, and all the physical machines had their virtual correspondent with remote access. The system was originally designed to be an addition to the class’s computer infrastructure; however, over the years, RADISH has become the Cyber Forensics and Security Laboratory’s main system, and the class laboratory acts as an addition to RADISH.

This new infrastructure was originally used for the Vulnerability Analysis and Control class. The system transformed tremendously with many improvements made over the past few years, which has allowed for the growth of the system and its utilization in other cyber forensics, cyber security, and steganography courses taught at Illinois Tech. This new system has eliminated many significant limitations. Students are now able to face real-life situations in the classroom by discovering, analyzing, and gaining control over computer network infrastructure they likely have never seen before. This transformation has not only improved the control and unreliability aspect of the class but has also created a platform to build new analytical skills.

This facility allows the university to meet students’ educational expectation though unlimited access to class laboratories. The ForSec Laboratory offers an exceptional online school experience focused not only on a self-study/test basis but also on students’ involvement and in class performance. Students who take courses online are able to experience a school desktop laboratory infrastructure from any location sharing the same resources as in-class students.
Real Time Commutations Laboratory (RTC Lab)
The RTC lab located at the Rice Campus is architected to be highly configurable and to support multiple projects simultaneously. There are over 30 test positions distributed across the lab tables. Students connect PCs or other specialized equipment to the test positions. The test positions are cabled to patch panels at the back of the room from which connections can be made to common equipment including hubs, switches and routers. Patch panels also provide access to the Internet via the IIT campus backbone network and to analog access links to the PSTN.

This layout enables the student to create various network configurations and to study their effects on quality of service, security, routing and other aspects of VoIP service. It enables the creation of VPNs for our industry lab partners to use when they need remote access to proprietary code and records. This layout also makes the lab an environment that can be shared by many students and projects simultaneously.

An extension of this laboratory with student test positions connected to both local resources and the main RTC Lab is installed in the ninth floor of the IIT Tower on the Main Campus.

Real Time Commutations Lab Resources
Lab resources include a variety of hubs, switches and routers as well as various pieces of specialized services and equipment including a call load generator, lines to a SIP Trunk service, lines to the hosted Vonage service, and various vendors’ IP PBXes and VoIP Phones and servers. In the course of student projects we have installed and made use of many different free ware tools and functional elements.

Office of Technology Services Computer Labs
OTS operates 12 computer labs on the Main Campus, all usually available from 8am until 10pm. The Information Technology Management student community usually use the labs in the following buildings:

- The Stuart Building has four computer labs, with a total of 115 workstations that are replaced every three years.
- Siegel Hall has two computer labs with a total of 52 workstations that are replaced every three years.
- Alumni Memorial Hall has one computer lab with 29 workstations that are replaced every three years.

In addition to these labs, OTS in partnership with the Galvin Library provides 53 laptops that are available for student use in the Library 24 hours a day, 5 days per week, plus Saturday & Sunday days. These laptops are replaced every three years.

Finally, 24-hour public access workstations are provided for student use in the McCormick Tribune Campus Center, Hermann Hall Union Building, McCormick Student Village, and State Street Village. These workstations are also refreshed every three years.

Between 2011 and 2013, OTS implemented a Virtual Computing Lab (VCL) to allow students and faculty to access many academic software titles remotely. VCL access continues to grow annually.
OTS Software
OTS PC labs offer 81 current software titles that specifically address engineering students' needs, and 49 titles that are geared toward students in the computing disciplines. These titles are reviewed every semester by the IIT Software Committee, and are updated after thorough testing for compatibility with existing lab hardware/software every summer. Many of these titles are also available on the VCL environment where software licensing permits.

Campus Wide Research computing
In addition to the academic & administrative data center, OTS manages a research data center that was launched in 2008. This research data center provides researchers as well as students a computing environment that is …

- Redundant 50KW uninterruptable power supplies
- Three 20-ton CRAC air-conditioning units
- A complete fire suppression system
- 8 distinct high-performance clusters and workstations ranging from multi-core distributed systems to densely populated GPU clusters
- >10Gbps connectivity into the IIT backbone network
- Cisco Nexus Infrastructure to support a unified fabric throughout both research and administrative data centers.
- Cisco UCS fabric interconnect, blade chassis & blades in both research and administrative data centers.

B. Computing Resources
In addition to the campus-wide computing facilities described in the previous section, the School of Applied Technology also has multiple computing facilities available to ITM students and multiple servers to support teaching and learning activities.

Server/Support Infrastructure
Main Campus Server/Support Infrastructure
Tech South 2034 equipment room—accommodates equipment to support the TS-2033 lab.
- 2 Windows Server 2012 servers with WDS
- Supporting routers, switches, and UPSs
- Clonezilla Imaging Server
Perlstein 219 equipment room—accommodates equipment support the Perlstein 218 lab.
- 1 Windows 2012 Server (Intel i7-4770, 8MB Cache, 32GB RAM, 1TB SATA HDD, 1TB SATA HDD storage)
- Supporting switches and UPSs
IIT Tower 9th Floor equipment room—accommodates equipment to support the Main Campus RTC Lab, and other equipment that supporting SAT.
- Cisco 2921/K9 router
- 2 Dell PowerEdge 2950 III Servers, 32G, with VMware ESXi 5.5 for RTC Lab VMs
- ASA 5505 for an ESINet network bridge to the Rice Campus RTC Lab ESINet
- NMS to assist in maintaining the RTC Lab equipment
- Supporting switches and UPSs
SAT support equipment for Main Campus consists of:

- 2 Dell PowerEdge R620 Servers, 256G RAM with Vmware ESXi 5.5
- Fujitsu ETERNUS DX100 S3 SAN, 16TB, for IIT-SAT Main Campus
- ASA 5505 for students to use for accessing VMs remotely over a VPN
- Supporting switches and UPSs

Rice Campus Server/Support Infrastructure

RC 241 — Data Center & VMware Farm

Provides server and desktop infrastructure for classes, projects, and research for faculty, staff, and students. Environment is running VMware vSphere 5.5 with storage being provided by a Fujitsu SAN

- hiram.rice.iit.edu - Fujitsu Eternus DX100 S3 SAN, Providing 32 TB of total storage, 16 TB 10K SAS, 16TB 7.2K SATA, 2-1GB iSCSI, 2-16 GB FC
- lombard.rice.iit.edu - Dell PowerEdge R710, (2) Intel Xeon E5530 @ 2.40 GHZ, 288GB DDR3 ECC RAM, (12) GB NIC, (2) 300GB 10K SAS
- lockport.rice.iit.edu - Dell PowerEdge R610, (2) Intel Xeon E5530 @ 2.40 GHZ, 196 GB DDR3 ECC RAM, (12) GB NIC, (4) 1TB 7.2K SATA
- alsip.otsads.iit.edu - ASUS Server, Intel i5-661@ 3.33GHZ, 8GB DDR2 RAM, 500GB 7.2 K HD, (2) GB NIC running Veeam Backup and Replication 7.0
  o Provides an enterprise backup solution for the entire VM farm.
- 4TB Seagate NAS
- 5 Cisco 2960-S GB Switch Core with FC uplinks
- Meru 1550 centrally managed 801.11n wireless network
  o 22 APs throughout building
  o Cisco 2969-S POE Switch
  o Utilizing Single Sign-on authentication and WPA2 Encryption
- Academic Administrative System
  o hinsdale.rice.iit.edu - Virtual Machine running Server 2008 Enterprise, Xeon-E5530 @ 2.40GHZ CPU, 8GB RAM, 1TB HD.
  o Used as a file server for the ITM Department

RC 254 — RTC Lab Server room

- Cisco IAD Router for VoIT SIP trunking
- 2 Dell PowerEdge 2950 Servers with VMware ESXi 5.5 for RTC Lab VMs
- 1 ASA5505 for an ESINet network bridge to the Main Campus RTC Lab ESINet
- Clonezilla Imaging Server 32 bit server
- Clonezilla Imaging Server 64 bit server
- Server room supporting routers, switches, hubs, and UPSs

Computer Laboratories

Main Campus SAT Computer Laboratories

Perlstein Hall 218 — the lab accommodates 28 students and measures 25' * 35'. The lab is used for instruction for ITM 301 and ITMO 456. Students also utilize this lab during open lab times when classes or labs are not being taught. This lab is a joint facility with the Department of Chemical Engineering.

- 29 Dell Desktop Computers
• (3.0 GHz Intel Core2Duo, 64KB L1 Cache, 6MB L2 Cache, 4GB RAM, 250GB SATA internal drive)
• 29 Monitors
  • (ASUS V2228-P 21.5 inch, 1920 x 1080)
• HP Printer LJ-P2055X

Tech South 2030—this classroom accommodates 12 students; its measurements are approximately 33' * 36'. The room is used to instruct ITMS 448 and project classes. Students bring personally-owned laptops to this classroom.
• 29 Monitors
  • (ASUS V2228-P 21.5 inch, 1920 x 1080)
• HP Printer LJ-P2055X

Tech South 2033—this computer classroom is approximately 40' * 41'. The room is used for ITM 301, ITMO 456, ITMT 492, and ITMT 593 classes. There are 25 seats with two computers at each station.
• 4 20-inch iMacs (A1224 EMC 2316, 4GB RAM, 150GB HDD)
• 25 Monitors
  • (ASUS V228-P 21.5 inch, 1920 x 1080) switched between the two sets of PCs
• Printer HP LJ100 color MFP M175nw

IIT Tower 9F3-1—this Main Campus extension of the RTC Lab has 10 student workstations. The room is approximately 27' * 15' and is used to instruct ITMO 546, ITMO 547, and ITMO 450. RTC Lab students also work on their semester projects in this space.
• 25 Premio Desktop Computers
  • (3.2 GHz Intel Core i5-4570, 256K L1 Cache, 1M L2 Cache, 6M L3 Cache, 16GB RAM, 500GB SATA HDD external boot swappable, 500GB SATA HDD internal storage)
• 11 Premio Desktop PC’s
  • (3.2GHz Intel Core i5-650, 64K L1 Cache, 64K L2 Cache, 4M L3 Cache, 8G RAM, 250G SATA HDD external boot swappable)
• 25 Monitors
  • (ASUS v193 19 inch, 1280 x 1024)
• OpenBTS (Open Base Transceiver Station), or cell site
• NTAP (Network Traversal and Performance) test bed consists of a switches, 8 routers, 8 hubs, and 2 (core2 Duo PCs), 1 Web RTC Server, and 1 Asterisk/STUN/TURN server
• Vonage VoIP MTAs
• Supporting switches, hubs, and UPSs

IIT Tower 9E3-2—this lab accommodates RTC Lab student projects. It measures 15' * 24' and supports instruction in ITMO 546 and ITMO 547, and also supports the lab’s ESINET NG911 projects with the National Emergency Number Association.
• 10 Premio Desktop PCs (core 2 Duos) with monitors for student RTC Lab projects
• NG911 ESINET Test bed consists of the following support hosts: SIPc (caller), PSAP call taker, SIPd, DNS1, ESRT, Public LOST, Private LOST, BCF (gateway), DNS2, and a PSAP
• 1 OpenBTS with a DC power supply rack mounted
• SIPp test bed consists of a SIPp server, SIPp client, an Asterisk server, and a switch
for monitoring

- Mu Dynamics (Google) mu-8000 Network Performance & Security Testing Appliance
- Clonezilla Imaging Server
- Supporting switches, hubs, and UPSs

**Rice Campus SAT Computer Laboratories**

**RC 255 - RTC Lab**—Supports student learning, projects and research in real-time communications. There are over 30 test positions distributed across the lab tables and racks to accommodate VoIP and other RTC equipment.

- 6 Premio Desktop PCs (core 2 Duos) with monitors for student RTC Lab projects
- VoIIT System consisting of a Kamailio SIP Server, mySQL Database Server, two Asterisk Servers
- 2 BGSx4e Norel Business Services Gateways
- 1 BGSX8ew Nortel Business Services Gateways
- 1 Cisco 1700 Series Gateways
- 1 Cisco MCS 7800 Series Server
- 2 Cisco 7940 Series IP Phones
- 1 Legacy PSAP
- 2 Vonage MTAs
- ESINET consisting of
  - Abacus 5000 for testing with SIP or SS7
  - Lab supporting routers, switches, hubs, and UPSs

**RC 256**—this lab supports instruction and research in wireless networking, including IEEE 802 standards as well as 3G and 4G digital communications; it is used for instruction for ITMO 542.

- ESINET and lab supporting routers, switches, hubs, and UPSs

**RC 207**—this lab/classroom is a general use computer lab used by a number of ITM courses.

- 21 Dell OptiPlex 980 Desktop Computers
  - Intel i7-870 @ 2.93GHZ CPU, 8GB DDR3 RAM, 512MB GPU, 250GB 7.2K HD, 1GB NIC
  - 17in LCD Monitors

**RC 210**—this lab/classroom is a general use computer lab used by a number of ITM courses. This is an OTS lab equipped and provisioned by OTS and operated and administered by the School of Applied Technology

- 21 Dell OptiPlex 990
  - Intel i7-3770 @ 3.40GHZ CPU, 8GB DDR3 RAM, 1GB GPU, 500GB 7.2K HD, 1GB NIC
  - 22in Widescreen LCD Monitor

**RC 244**—this lab/classroom is used by our ITMO and ITMD courses due to the hardware requirements of these classes.

- 25 Premio Desktop Computers
  - Intel i7-3770 @ 3.40 GHz CPU, 32GB DDR3 RAM, Onboard GPU, Removable Dual Star-Tech HD Bays (500GB 7.2K HD’s), Dual 1GB Intel NIC
  - 20in LCD Monitor
RC 247—this lab/classroom is used by our ITM301 Intro to Hardware and Software class; the lab is configured to allow the students to practice assembly and disassembly of desktop computers.

- 10 whitebox PCs (custom built from parts)
  - Intel i3 @ 1.5GHZ CPU, 8 GB of DDR3 RAM, Onboard GPU, 250GB 7.2K HD, 1GB NIC
  - 17in SOHO LCD Monitor

RC250—this lab is part of our Cyber Forensics and Security Laboratory and is used for a number of ITMS courses and in support of student labs and projects.

- 25 Premio Desktop Computers
  - Intel Core 2 Quad @9300 @ 2.50GHZ CPU, 8GB DDR2 RAM, 250GB 7.2K HD, 1GB NIC
  - 18in LCD Monitors

SAT Research Laboratories

Rice Campus

**Eucalyptus 4.0.2 Cloud Computing Stack**—Capacity is over 100 IPs instances supporting over 200 virtual machine instances over 4 nodes and up to 1 TB of Object based storage and 750 GB of EBS based storage. Capabilities include load balancing and elastic deployment. Systems are provisioned by Cobbler 2.4.1 instance running on Ubuntu 14.04 server edition. Projects on the Eucalyptus Stack are currently running an elastic Hadoop Cluster with capacity up to 32 nodes.

- Incheon - Dell PowerEdge 2970, 12 cores, 32 GB of memory, 1 TB of 15K SCSI local storage
- Alexandria - Dell PowerEdge R710, 8 cores, 96 GB of memory, 3 TB of local storage
- Quantas - Dell PowerEdge R510, 8 cores, 32 GB of memory, 3 TB of local storage
- Nebelet - Dell PowerEdge R510, 8 cores, 32 GB of memory 3 TB of local storage
- lexington.sat.iit.edu 1 Dell PowerEdge 1850
- 3 HP ProLiant DL360
- oswego.sat.iit.edu -> cobbler server 1 Dell PowerEdge SC 1425

**Deployment and Operations Research Cluster**—Provides research capabilities into CEPH distributed file system clusters and MAAS (Metal as a Service) clustering for application install.

- 16 Dell Poweredge 1425, 2 Single core Xeon processors, 4 GB of memory, 40 GB hard drive

Test Eucalyptus Private Cloud—two test clouds supporting cloud research. Test Cloud 1 is used for the practice of installation and upgrade testing for production cloud, using Centos 6

- 1 WhiteBox server, 8 cores, 16 GB memory, 1 TB of local storage
- 3 ASUS RS100-X7, 4 cores each, 8 GB memory, 1 TB local storage

Test Cloud 2 is used for research into passthrough via VFIO in the Linux Kernel for use in on demand GPU cloud computing resources.

- 1 White Box servers, 8 cores, 16 GB memory, 1 TB of local storage
- 3 ASUS RS100-X7, 4 cores each, 8 GB memory, 1 TB local storage
- 1 GPU cluster for GPU research – Containing for AMD Radeon
- 3 White Box storage systems (Free NAS)
C. Guidance

OTS provides various online resources in myIIT for use of the following computing resources:

- Email and Google Apps
- Internet Access
- myIIT
- Computer Labs and Remote Printing
- IIT Online
- Telecommunications

There is also a searchable Support Desk Knowledge Base for problem assistance.

The ITM Faculty and Teaching Assistants provide assistance for any software related to courses.

*ForSec Lab*— during the first class session of all courses taught in the Forensics and Security Lab, students receive orientation in the use of the different computing resources offered. Through the semester Lab TAs provide assistance for any software related to courses.

D. Maintenance and Upgrading of Facilities

Both OTS- and SAT-operated computer labs undergo frequent review and assessment to keep computing resources current and accessible. These computer labs are used for both academic courses and university-organized events. Lab computers are refreshed on a three-year cycle, to ensure that students have access to equipment that supports their academic goals. Lab instructional software is also reviewed every summer by faculty, and is updated after thorough testing for compatibility with existing lab hardware and software.

All OTS workstations and servers are managed and maintained by full-time professional staff in the Office of Technology Services. These staff members work with faculty and students to insure that the systems are reliable and the software is adequate for coursework in the various university computing curricula.

SAT workstations and servers are managed and maintained by full-time professional staff in the School of Applied Technology technical services. They are ably assisted by ITM student staff members who must have completed ITM 301 and have a level of knowledge equal to or greater than a CompTIA A+ certified technician. As ITM student technical staff members advance in their studies, they are entrusted with projects of increasing depth and responsibility, always under vigilant supervision and mentoring of the professional staff. This offers them a significant opportunity for professional development, something rarely available in student employment.

Adequacy of the SAT computing facilities is assessed on a continuous basis, but usually coincides with the request to ITM faculty each semester to provide any changes to the software and hardware for the next semester. In the majority of the ITM classes, the standard upgrade cycle is sufficient. In a few courses each year, specific hardware is upgraded and new software licenses are purchased as faculty introduce new courses. Very few student complaints are registered each semester to the professional staff, and students can voice concerns directly to the SAT Director of Information Technology or the university Chief Technology Officer if the situation is warranted.
ForSec Lab—This lab is continuously updated to keep pace with the increasing cyber security needs of businesses, government institutions, professional and educational organizations, and individuals. The lab software is reviewed every summer by the ForSecLab staff and is updated after testing for compatibility with the existing equipment. All workstations and servers are managed by the ForSecLab staff.

E. Library Services

The IIT Libraries consist of five facilities located on three campuses. Because of the multidisciplinary nature of IIT’s programs in engineering and the computing disciplines, all libraries provide some level of support for these programs. The Paul V. Galvin Library is IIT’s main library and provides primary support for engineering and computer science, both in terms of collections and services. IIT’s other libraries are the IIT Chicago-Kent College of Law Library, the Graham Resource Center serving the College of Architecture, the Center for the Study of Ethics in the Professions Library, and the Institute for Food Safety and Health Library. IIT libraries are actively engaged in the ongoing assessment of their collections and services, through both quantitative and qualitative methods. On the quantitative side, the library collects and regularly reviews data on such things as use of library materials (print and digital), gate counts, instructional sessions, and reference transactions. On the qualitative side, Galvin Library has participated in LibQUAL+, an internationally normed library service and quality assessment instrument developed by Texas A&M University (TAMU) and the Association for Research Libraries (ARL), four times since 2004. We have also been part of IIT’s Students Speak survey. The data generated by all means of assessment is reviewed to inform the libraries' decisions on a wide array of collection and service-related issues.

Collections

The libraries’ total collections consist of more than 62,000 full-text e-journals, 1,000,000 e-books, and 170 on-line research databases plus a robust legacy collection of more than 1,200,000 physical volumes in all formats. Out of this total collection, approximately 24,000 e-journals, 40,000 e-books, and 80 databases directly support IIT’s current engineering and computer science programs. The library also maintains IIT’s institutional repository, which allows students and faculty to archive and optionally disseminate their work, including theses and dissertations, conference presentations and poster sessions, research papers, journal articles and preprints, and datasets. In addition to the libraries’ local collections, IIT is a founding member of the Consortium of Academic and Research Libraries in Illinois (CARLI), a resource-sharing consortium that allows us to provide access to more than 32 million library items from 86 additional academic libraries statewide.

Overall, the data obtained through the LibQUAL+ and Students Speak surveys indicate that the libraries’ technical collections are adequate to support the engineering and computer science programs. The one area singled out in the students speak surveys as inadequate, materials sciences, was addressed in FY2012–2013 through a $5,000 grant to purchase new books in this area and a realignment of databases, replacing the ASM handbooks with the SpringerMaterials database. Quantitative data shows that online technical collections are increasingly heavily used by IIT researchers, while use of print technical resources is in steady decline. These data helped inform our decision to withdraw many print journal back issues and older books from the collection, enhancing the discoverability of the remaining library materials and providing room to expand collaborative and individual study space. These data have also shown a gradual
decline in the use of traditional non–full-text “abstract and index” (A&I) research databases along with a marked increase in the use of databases with special features, like Science Citation Index, and full-text sources. This, along with discussions with faculty in several departments, led to the library dropping several A&I databases over the past two years in favor of full-text sources.

The emphasis on multidisciplinary studies and research means that more than just the technical collection is required to support the engineering and computing programs, however. Key non-technical areas of interest include business, economics, entrepreneurship, public policy, law, and the behavioral sciences. Qualitative data shows less user satisfaction with the library collections in these areas.

Budgeting is the primary challenge to providing adequate library support for IIT’s engineering and computing programs. Thus far, there has been no significant impact on the quality of support we provide, mainly due to the resource sharing and document delivery options available through CARLI, on which we rely heavily. For several years, we have been unable to add new journal titles without a corresponding cancellation of another title of approximately the same price. We have not yet had to curtail purchasing of requested books, but only because of the low volume of such requests due to engineering faculty’s heavier reliance on the journal literature.

The libraries’ collections do not provide systematic access to a broad range of engineering standards to support the professional engineering curriculum. This is offset by the fact that many standards issuing organizations provide access through deeply discounted or free student memberships and/or class-based access programs.

Services
IIT Libraries provide a wide array of services in support of the engineering and computing programs, including information competency instruction and in-depth research help. IIT librarians have been engaging with faculty for at least ten years to provide customized information literacy competency instruction, most often in the freshman level “Introduction to the Profession” classes and in the Interprofessional Projects (IPRO). Librarians have also engaged with faculty to provide instruction in other classes, such as the new engineering themes program. These sessions are focused on meeting the standards for information competency established by the Association of College and Research Libraries and the American Society for Engineering Education. Librarians have also been involved in supporting the IPRO program, providing research help and guidance as well as targeted sessions on literature searching and patent searching.

In addition to classroom instruction, librarians provide individual research help to students and faculty, including in-depth research assistance, citation analysis, and assistance with the institutional repository. To assist with this aspect of library service, the library established a Research Help Office staffed with professional librarians during peak hours and undergraduate research assistants at other times. Research assistance is also available to students and faculty by appointment.

Facilities
Improvements in library facilities support students across all disciplines. These include extended hours and enhanced collaborative and individual study spaces.
One of the most persistent requests from students, expressed in both the Students Speak and LibQUAL+ surveys was the need for extending overnight hours to include both levels of the library. This was done in the fall of 2013 and included hiring two additional support staff to manage the overnight hours.

One of the other consistent requests from students was the addition of both collaborative and individual study space in the library. To meet this need, the library has created more than 100 additional seats. This study space was created through the removal of outdated and little used print materials and print materials that are readily available on-line. This had the added benefit of making the print collections easier for students to use. This project was also supported by the Class of 2012 through the 2012 student gift, which provided funding for furnishings for the expanded study space.

F. Overall Comments on Facilities

Every building on campus has a building monitor who can be contacted about any office specific issues and who is also in charge of building safety. Work orders can also be submitted directly to IIT Facilities.

Regular classrooms are maintained by university facilities professional staff at both the Main and Rice Campuses. Online classroom maintenance is the responsibility of IIT Online. Computer lab maintenance is the responsibility of the Office of Technology services for university labs and servers, and the School of Applied Technology technical services for SAT labs and servers supporting the ITM degrees. Support requests can be made via supportdesk@iit.edu for issues with regular, online, or OTS computer classrooms, or to appliedtech@iit.edu for SAT computer classrooms. Computer labs have a student lab manager available whenever the lab is open. OTS and SAT technical services provides many online resources to assist students with software installed in the labs, and with www based administrative systems. There is also a searchable Support Desk Knowledge Base for problem assistance.

The library has many full time librarians and part-time student library aids available to assist students with their research needs.

The ForSec Lab develops and supports an experimental environment for cyber security and digital forensic education, collaboration, evaluation and research. Cyber security and forensics research, testing and analysis benefits both academic and industry organizations in today’s IT climate. Innovative student ideas and many student lab projects have been recognized with awards, presentations to professional societies, coverage in newspapers, mention in trade publications and offers of employment. Illinois Tech’s Cyber Forensics and Security Lab is operated by the Center for Cyber Security and Forensics Education (C²SAFE).
CRITERION 8. INSTITUTIONAL SUPPORT

A. Leadership

The Dean of the IIT School of Applied Technology, Dr. C. Robert Carlson, also currently serves as Chair of the Department of Information Technology & Management. The associate chair of the department, Prof. Ray Trygstad, also serves ITM Director of Undergraduate Advising and Director of Information Technology for the School of Applied Technology. Dean Carlson is ultimately responsible for faculty hiring, budget allocations, and policy matters.

The ITM Curriculum Committee, chaired by Prof. Trygstad, is comprised of three full-time faculty or staff members and two adjunct faculty members. In addition, all full-time faculty are invited to participate at their discretion. The staff member on the committee is the SAT Director of Academic Affairs, who is also an ITM adjunct faculty member and graduate student adviser. Any changes to the undergraduate curriculum must be first approved by the Curriculum Committee. This Committee has had continuity of membership since it was established in 2013 and usually meets monthly. Major changes to the program also require approval by the IIT Undergraduate Studies Committee, and new degrees require additional approval by university faculty, the Provost, and the Board of Trustees.

The SAT Board of Visitors also plays a role in ensuring the program’s quality, and the Provost’s office conducted an external review of the ITM Department in 2014, with feedback for the undergraduate program generally favorable. The report of this review is included as Appendix ?.

Dr. Carlson has served as the Director and later Chair of the program since its establishment in 2002, and Prof. Trygstad has served as Curriculum Coordinator and later as Associate Chair since then as well. As the ITM Department is currently a teaching rather than a research department, Dr. Carlson is the sole tenured faculty member in the department. The university (Provost’s office) and School of Applied Technology (Dean’s office) has been supportive with funding for faculty and staff necessitated by the steady growth of the program, as well as expansion of office and laboratory space.

B. Program Budget and Financial Support

Except for discretionary funds from donors for special events and scholarships, all department funds are operational funds from the Dean’s office. Most of these funds are committed to salaries and benefits. Faculty may be tenured (reappointed automatically), tenure-track (with 4-year plus 3-year contracts), non-tenure-track full time, or adjunct (part-time). All faculty members except adjunct faculty receive benefits. Non-tenure-track full time faculty are protected by university regulations with notice dependent on length of service at IIT. Most of the rest of the salary budget is for teaching assistant support. Eight-five percent of the TA support is fixed and the other 15% varies with enrollments. So, most of the budget is permanent and recurring. Capital funds are usually available at the beginning of each fiscal year, June 1, for equipment and facility upgrades/repairs. The bulk of capital funds are committed to computer laboratories and server infrastructure.

The ITM Department is provided a budget for teaching assistants every semester. All undergraduate and graduate laboratory or programming courses with more than 25 students are assigned a teaching assistant, with priority for TA assignment going to full-time faculty.
Whenever possible, classes or faculty members with student enrollment in excess of 50 are assigned two teaching assistants. Teaching assistants are primarily graders; they do not teach laboratories, but they are required to provide a minimum of two hours of office hours each week to assist students and respond to grading issues. As our enrollment grows, managing the TA budget will be an important issue.

ITM faculty can submit requests to the department or college for funding for external educational conferences (i.e. SIGITE) or similar events.

The department ensures that individual full-time faculty members have the necessary computing resources to be effective in their roles. Since all incoming undergraduates receive a new iPad mini in their first week of class, the department has just purchased new iPads for all full-time faculty members, to ensure that they are conversant with the technology used by our students.

As noted in Criterion 7 above, extensive computing infrastructure is available to support teaching and learning activities. One concern is that our program is growing very rapidly with the bulk of our growth occurring at our Main Campus in Chicago, and we are beginning to be handicapped by the fact that the bulk of our computing facilities are at our Rice Campus and we do not have sufficient dedicated, consolidated space at the Main Campus to provide the lab and server infrastructure to support this growth.

C. Staffing

The ITM department has two full-time administrative staff supported by part-time student staff, and by School of Applied Technology staff members who devote a portion of their time to the department as necessary. Currently this is sufficient to manage the day-to-day operational tasks of the department, and also to assist with department events or faculty conferences. As administrative systems change at IIT, there is training for staff provided by the department responsible for the administrative system.

IIT Online staff provides instructional support to all academic units and are each to reach for both education consulting, or educational technology consulting.

The School of Applied Technology Technical Staff under the SAT Director of Information Technology are two full-time employees who manage and administer the computing infrastructure described in Criterion 7. They are assisted by a staff of student employees. Additionally the Forensics and Security Lab and the Real-time Communications Lab described in Criterion 7 each have a part time system administrator, and their own student employee staffs.

D. Faculty Hiring and Retention

The process for faculty hiring is 1) secure approval for a position from the Dean’s office, 2) advertise the position for applications (including diversity considerations), 3) conduct phone interviews and follow-on on-site interviews (usually 3-4 per position), 4) get approval from the Dean’s office and Provost’s office (who ensure that a diverse pool of candidates was considered in the search), and the final appointment made by the Dean’s office. The department currently employs no tenure-track faculty and has no tenure track faculty positions. To date all full time faculty members—except the chair—have been hired from current adjunct faculty members, many of whom were already employed at IIT in university or college IT or academic support positions.
New hire faculty are probationary for their first year and adjunct faculty who do not comply with departmental academic policies are not invited to return to teach for us. Adjunct faculty are drawn from full-time IT professionals, consultants, recent retirees, community college faculty, and full-time university staff members. Apart from probationary faculty not invited to return, our losses of adjunct faculty generally occur due to increased job responsibilities in their primary employment which do not leave them with enough free time to teach with us.

Several of our faculty members have taught in the program since the program began in 2002. Faculty retention is very high, driven by competitive salaries, a great working environment, good facilities and support, and collegial relationships. We treat adjunct faculty members as equal members of our faculty and always treat our students with respect and consideration.

E. Support of Faculty Professional Development
There are many on campus teaching and advising seminars that are funded by the college or provost’s office and are available to all faculty.

The University has a sabbatical policy in line with most universities (one semester at full pay or one year at half pay after 6 years) and gives leaves of absence without pay as appropriate for faculty development.

PROGRAM CRITERIA
See Criterion 5: Curriculum, A. Program Curriculum, section 5.
APPENDICES

Appendix A – Course Syllabi

Please see the file labeled IIT_ITM_ABET_Self-Study_2015_Appendix_A.pdf
Appendix B – Faculty Vitae

Please see the file labeled IIT_ITM_ABET_Self-Study_2015_Appendix_B.pdf
Appendix C – Equipment

Please see Criterion 7 for a comprehensive list.
Appendix D – Institutional Summary

1. The Institution
Illinois Institute of Technology
3300 South Federal Street
Chicago, Illinois 60616

Chief Executive Officer:  John L. Anderson, President
Prior to the site visit, the Chief Executive Officer will be Alan W. Cramb, President
(Dr. Cramb is currently the Provost of the university)

Person submitting report: Ray Trygstad, Illinois Institute of Technology, Department of
Information Technology and Management, 10 W. 33rd Street, Chicago, IL 60616,
630-447-9009 trygstad@iit.edu

Accreditation: Illinois Institute of Technology has had continuous accreditation from the
North Central Association of Colleges and Schools since 1941; the last accreditation visit
was in 2006.

2. Type of Control
Illinois Institute of Technology is an independent non-sectarian, co-educational, urban
university. It is governed by a board of trustees drawn from diverse groups representing the
public interest.

3. Educational Unit
The Department of Information Technology and Management at IIT is part of the School of
Applied Technology which reports to the Provost, who reports to the President of the University.
4. Academic Support Units

The Department of Applied Mathematics teaches required courses in discrete mathematics, probability and statistics, and various math electives. The department head is Dr. Fred Hickernell, Professor.

The Department of Biological and Chemical Sciences teaches general education elective science courses in biology and chemistry. The department head is Dr. M. Ishaque Khan, Professor of Chemistry.

The Department of Civil, Architectural and Environmental Engineering teaches general education elective courses in Engineering Graphics. The department head is Dr. Gongkang Fu, Professor of Civil and Architectural Engineering.

The Department of Humanities teaches general education elective courses in humanities. The department head is Dr. Maureen A. Flanagan, Professor of History.

The Department of Psychology teaches general education elective courses in the behavioral sciences and statistics. The department head is Dr. Ronald S. Landis, Professor.

The Department of Physics teaches general education elective courses in astronomy. The department head is Dr. Grant B. Bunker, Professor.

The Department of Social Science teaches general education elective courses in the social sciences. The interim department head is Dr. Maureen A. Flanagan, Professor of History.

The Undergraduate Program in Business of the Stuart School of Business teaches general education elective courses in economics and business statistics. The Director of Undergraduate Programs in Business is Dr. John R. Twombly, Clinical Professor of Accounting and Finance.

The IPRO office teaches the interprofessional project courses. The IPRO Director is Dr. Jeremy Alexis, Senior Lecturer.

5. Non-academic Support Units

Academic Resource Center (ARC)
The Academic Resource Center (ARC) is Illinois Institute of Technology’s primary teaching and learning center on the university’s Main Campus in Chicago. Its mission is to provide students with the resources necessary to achieve academic excellence through student-centered learning. The ARC supports many required undergraduate courses in Mathematics, Physics, Chemistry, Engineering, Architecture, and Psychology.

The ARC staff includes fifty undergraduate and six graduate ARC Scholars who are among the brightest and most motivated students at IIT. Each ARC scholar must be either a junior, senior, or graduate student with an overall GPA of 3.5 (or higher), and a faculty recommendation. ARC Scholars are chosen through a two-tier interview process to evaluate their academic and tutoring ability. Every year we hire new ARC Scholars (tutors). While all our tutors are high-performing
students and must pass a demanding interview process, not all have a background in peer tutoring and pedagogy and all must be individually trained.

The Academic Resource Center at IIT is committed to fostering intellectual growth and academic achievement among our students. The ARC emphasizes peer tutoring, interactive group learning experiences, and technology-supported education in a warm, inviting, and collegial environment where students can learn and study at their own pace. In addition to its tutoring services, the ARC provides a space for students to engage in peer tutoring, to gather for informal group study sessions, to work on course projects, and to fulfill their computing and printing needs. The ARC markets its services to student groups and at freshman orientation and presentations at a number of freshmen and sophomore classes during the first couple of weeks of school and mid-term to increase student awareness of ARC resources. These initiatives have made a noticeable difference in the number of students using the Center each semester as well as during the summer session. In 2009, the Center hosted 9,156 visits by 1,023 students; this year, the ARC had a record 11,972 visits by 1,449 students.

Tayyab Arshad is the ARC Director. He joined the staff in July 2008 as ARC Manager and was promoted to the position of Director in September 2010. He holds a BS in biology, as well as a Master in Education with a concentration in instructional leadership from the University of Illinois at Chicago. He brings many years of experience working in learning centers, including five years as a coordinator in sciences in the tutoring center at Triton Community College. While at Triton, he facilitated supplemental instruction, in-class tutoring and other group activity programs to increase student visits for the tutoring center.

Hassan Killidar is the ARC Manager. He joined the staff in August 2011. While obtaining his bachelor of science from Loyola University, he worked full-time as a bank manager. He also received a Medical Diploma in June 1999 from Poznan University of Medical Sciences. He has been an adjunct faculty member in the Science Department at Triton College since 2007. Hassan brings managerial and teaching experience to the Center.

Career Management Center
The Career Management Center (CMC) at the Illinois Institute of Technology serves the critical function of providing the linkage between students and graduates with local, national and international employers. The CMC's mission is to engage students and alumni to develop and practice lifelong career management skills to realize their career goals. Students are strongly encouraged to register with the CMC during their freshman year in order to begin developing their careers as soon as possible. The CMC also seeks to develop lasting partnerships with employers by providing employers with the opportunity to participate in key programs to identify and hire skilled, technically-prepared individuals. The Director of CMC is Andres Garza, and the CMC has a professional staff of eight.

CMC Programs
- Resume Development: The CMC provides workshops and one-on-one advising on resume writing throughout the year. Resumes, once approved by an adviser, may be posted on Jobs4Hawks, where they are made available to potential employers.
• Professional Development Services & Workshops: The CMC provides a wide variety of services and workshops to help students develop professionally. The services include one-on-one career advising with a Career Counselor who specializes in the student's field, mock interviews, and resume and cover letter critiques. Workshops include Resume and Cover Letters, Interviewing with Confidence, Internships and Coops, How to Work a Career Fair, Researching Your Industry, LinkedIn, Job Search Strategy, 30 Second Elevator Pitch and Negotiating Your Offer. Two-hour Boot Camps are conducted during the summer for students still looking for work.

• Resume writing and an invitation to use CMC services are extended to new students in many of the Intro to the Profession 100 level courses. The staff makes numerous presentations tailored to the needs of student organizations or in classrooms upon the invitation of faculty. The CMC also works with other campus units to make students aware of scholarship and special opportunities to enhance learning.

• Cooperative Education & Internship Programs: The CMC provides monitoring and administrative services for students in approved Cooperative Education & Internship positions. Assistance in obtaining Curricular Practical Training (CPT) Work Authorization for these positions is also provided to international students by the CMC in partnership with the International Center.

• Student Employment Office: The CMC operation also includes assisting campus units in identifying, hiring and paying students for on-campus positions. These student employees allow campus units to maintain essential services while providing students with an opportunity to earn some money and develop their professional skills.

• Recruiting Events: IIT Career Fairs are open to all local, national and international employers seeking quality hires from all disciplines. The Illinois Institute of Technology is a prime institution targeted by many employers and sponsors 2 major career fairs attended by more than 1,500 students. In addition, The CMC sponsors two Career Connections Networking Events each school year, employer information sessions, Etiquette Dinners, and many other events for employers to interact with students.

• On-Campus Interviewing: On-Campus Interviewing (OCI) is a program allowing employers can use to interview and hire IIT graduates, alumni, and undergraduates seeking full-time, co-op or internship positions on IIT’s campuses. The Career Management Center holds OCI during the fall and spring semesters.

• Jobs4Hawks: Students submit resumes and cover letters to be reviewed and approved by CMC career advisers. Employers may post job listings, schedule on-campus interviews, request resume books, and search through student resumes for candidates meeting the criteria for their open positions. The system allows the CMC and employers to communicate with students about recruitment events and opportunities.

• Tracking Reports: The CMC tracks graduating students' progress in finding employment or enrollment in post-graduate programs, and provides a regular updates and a year-end report to the campus units.

• Web Site: The CMC maintains a comprehensive web site with online resources for students, alumni and employers at www.cmc.iit.edu
Director of Academic Advising
The Director of Academic Advising is Matthew Bauer, bauerm@iit.edu. His responsibilities include:
- training and assisting all undergraduate faculty advisors (new and ongoing) about both technical advising systems and processes
- organizing and executing new undergraduate student every summer and winter break. This includes a custom, online new student advising application for faculty and students
- implementing the campus wide early warning system targeted at collecting poor performance and poor attendance data on undergraduates (mostly first year) and sharing with academic and non academic advisors for intervention
- managing the academic standing review process at the end of every term
- assisting the registrar and UG Academic Affairs with notifying students (and faculty advisors) about probation requirements, course retakes, and graduation checkout

Galvin Library
Details in Criterion 7. Sharon Bostick, Dean of Libraries

Humanities Writing Center
Individual assistance for writing assignments is available in the Humanities Writing Center, which provides guidance with assignments in engineering, science, and technical communication courses as well as courses in the humanities (literature, history, art & architecture history, philosophy) and social sciences.

One-on-one instruction focuses on the specific needs of the individual student. Typically, a student takes a project or paper assignment to the Writing Center, where a faculty tutor assists with the writing process:
- by helping to interpret the goals and requirements of the assignment
- by guiding the processes of information gathering, analyzing, evaluating, synthesizing, organizing, and documenting
- by helping to address "local" issues such as grammar, punctuation, spelling, conventions of typing, etc.

The Writing Center is opened five days a week, Monday through Friday, with a typical daily schedule of 9 am to 4 pm. Weekly student sign-up sheets were posted on the faculty offices of Siegel Hall, Rooms 232 and 233, allowing visitors to make their own appointments. Most appointments last from one half to one hour. Students may bring in any form of writing, from an undergraduate first-year composition assignment to a PhD project. See below for current attendance records.
There is one permanent staff member: Prof. James Dabbert, Director, IIT Writing Center
Interprofessional Projects (IPRO) Program Office

The IPRO Program Office is responsible for administering and coordinating all aspects of The IIT Interprofessional Projects (IPRO) Program. This office was established in 1995 in order to plan for and eventually implement the general education requirement that all undergraduates complete two interprofessional project courses in order to graduate, with each course representing three credit hours. There are two prominent functions that achieve this result:

1. Since the interprofessional course, by design, serves all undergraduate disciplines and programs, the IPRO Program Office has the responsibility to coordinate and integrate faculty, sponsors and students in order to identify, organize, promote, implement and assess on the order of 150 IPRO project teams each year, organized through about 60 IIT IPRO course sections available for registration, so that our students can fulfill their interprofessional project requirement. This serves on the order of 1,500 students each year (producing on the order of 4,500 credit-hours), with an average team size of ten students from any level (sophomore through graduate) and any discipline and professional program at IIT, although the vast majority of students have junior or senior standing. The disciplines involved across all IPRO course sections encompass all undergraduate degree programs: applied mathematics, architecture, business, computer science, engineering (aerospace, architectural, biological, biomedical, chemical, civil, computer, electrical, environmental, materials, mechanical), the sciences (biology, chemistry, physics), humanities (journalism, technical communication), industrial technology and management, information technology and management, math and science education, psychology and social sciences (political science). Graduate students may also participate and receive credit toward their degrees, depending on their field of study, including, in addition to those previously mentioned, law, design, and food safety and health.

2. Since the purpose of the interprofessional course is to provide students with experiences that emulate the workplace, an important aspect of the IPRO Program is the involvement of workplace organizations that identify viable “real world” complex topics, and provide financial support and professional advice to our IPRO teams throughout the semester. Approximately 20 percent of projects are sponsored, with many additional projects benefitting from informal collaboration with a range of business, non-profit, entrepreneurial and public sector organizations.

The roles and responsibilities of The IPRO Program Office are summarized as follows:

- Facilitate review and implementation of policies and procedures that define the learning objectives and govern the fulfillment of the two-IPRO project course general education requirement.
- Implement and maintain an efficient and effective system for creating, delivering and assessing project courses consistent with the learning objectives established for an interprofessional project experience.
- Develop and maintain sponsor relationships that are compatible with our faculty expertise and offer interesting and challenging learning experiences for our students, and that provide financial resources to help support the costs of coordinating and delivering the interprofessional project experience in a professional manner. This is facilitated via a standard IPRO Collaboration Agreement form that establishes expectations and outcomes.
for the IPRO experience and the right of students to retain intellectual property rights for concepts that they create through the IPRO course.

- Manage an operating budget and various grant and unrestricted donation accounts that support the delivery of the interprofessional course.
- Organize various events that support the learning objectives, including workshops (e.g., teambuilding, communication (written, graphical, oral), project management, innovation and design, ethical decision-making, business planning, technology commercialization, intellectual property).
- Organize and participate in various events that support the development and advancement of the interprofessional curriculum, including faculty orientation sessions, faculty development workshops and other education conference opportunities that help to promote information exchange between IIT faculty and colleagues at other institutions, particularly in the field of team project based learning modalities.
- Participate in open houses for prospective students, career fairs with recruiting organizations and alumni events, as well as give presentations to trustees, industry advisory boards, community organizations and visiting academic colleagues.
- Coordinate midterm and final reviews of IPRO team progress and accomplishments that provides a venue for all IPRO teams to present their work via formal oral presentations, and includes an evaluation process (with working and retired professionals, faculty members and graduate students) that is linked to assessment of learning objectives.
- Coordinate the end-of-semester IPRO Projects Day (held three times each year) that provides a venue for all IPRO teams to present their work via interactive exhibits, and includes an evaluation process (with working and retired professionals, faculty members and graduate students) that is linked to assessment of learning objectives, and offers a showcase event for IIT alumni, trustees, sponsors, employers, high school and junior high school students, parents of IIT students and prospective students, and the general public.
- Support the information needs of and be responsive to the Undergraduate Studies Committee to provide academic oversight of the IPRO course.
- Coordinate the IPRO proposal review process each semester that leads to the review of candidate IPRO projects for the subsequent semester, with on the order of half of the IPRO projects continuing and half new each semester.
- Identify and encourage the use of best practices by IPRO instructors that have value in enhancing the effectiveness of IPRO teams (e.g., peer evaluation, grading guidelines (team performance and individual performance on the team) and establish an agreement with faculty members who serve as IPRO instructors concerning the expectations of the IPRO Program for their role and responsibility.
- Encourage academic units and faculty to collaborate across disciplines and programs, recognize innovative approaches and support scholarship, publication and presentation at national conferences.
- Encourage graduate students to participate on interprofessional project teams and seek ways to adapt the IPRO course model to support graduate research and commercialization activities across professional boundaries and build competency of graduate students to team teach and teach in teams.
- Offer three IPRO learning platforms that serve the needs of students from a diversity of backgrounds and interests, including the traditional single-topic IPRO team project, the
multi-IPRO themed cluster (with such themes as STEM education innovation, new ventures, urban agriculture, community engagement and urban infrastructure innovation), and the interprofessional by design workshop format.

- Integrate and coordinate the process for students to enroll in interprofessional courses as part of the regular course registration schedule and provide timely information about IPRO course topics at http://ipro.iit.edu, giving particular attention to constraints that help to control the size of the team and the mix of students from various disciplines on a team.
- Provide a syllabus template that offers a generic framework and semester schedule for IPRO instructors to use in planning and implementing an IPRO project course.
- Coordinate IPRO team tools that facilitate communication and recordkeeping, including http://igroups.iit.edu and http://iknow.iit.edu.
- Coordinate the submittal and review of appropriate deliverables by IPRO teams, such as: project plan, mid-term review, project video, final oral presentation, exhibit/poster, abstract, final report and team work product.
- Coordinate surveys and evaluation tools that provide feedback to the IPRO Program Office from students, faculty, sponsors and alumni.
- Provide support to IIT colleges that facilitate the assignment of IIT faculty members to serve as IPRO instructors as part of their regular teaching load, support part-time IPRO instructors who offer specialized expertise and capacity and support IPRO team expenses on an as-needed basis.
- Encourage student and faculty ideas for new venture IPRO projects that meet all of the requirements of a typical interprofessional project and encompass venture development and opportunity analysis that can lead to a business plan, prototype and user testing.

Contact: Jeremy Alexis, IPRO Director & Senior Lecturer, Institute of Design

Office of Technology Services (OTS)

In addition to the classroom, campus and computer lab technology listed in Criterion 7.

Banner

All administrative services that support the university’s academic activities use the well known Banner system. IIT supports the myIIT portal allowing our faculty and students to register to classes, apply for financial aid, post and review grades and all other activities using the self-service portal. These services are available 24x7x365.

Blackboard

The number of courses utilizing the Blackboard learning management system continues to increase. The Blackboard system hosts a website for every course offered at IIT and serves as a portal to IIT Online streaming media, which can be accessed by students in both online and live course sections. Instructors post notes, lectures and assignments on the course page, which also features a discussion board and chat room.

In 2013 OTS upgraded Blackboard to the latest release, Blackboard 9.

Leadership: OTS operates under the direction of Ophir Trigalo, Chief Information Officer
Retention Task Force
The University Retention Task Force (RTF) is committed to improving students’ overall experience at the Illinois Institute of Technology (IIT). The task force is taking on the responsibility of increasing student retention to 90% and above.

IIT recognizes the need for departmental collaboration to provide excellent service to our students. Therefore, IIT convened a task force to increase student retention and start a community. Since its start in 2006, RTF has implemented a number of programs. These programs include: enhancing the relationship between students and faculty advisors, Summer Orientation, Early Warning System, DegreeWorks and many more. Our goal is to increase 6 year graduation rate to above 75%. Since the formation of University Retention Task Force first year student retention rates have increased by almost ten percent. This increase is also shown in the undergraduate student graduation rate. These achievements clearly show the effects of retention task force which started in 2006. We have set high bench marks for the university and students. Every year the task force focuses on a particular cohort or department or a university office to improve communication and assessment through various surveys such as, National Survey of Student Engagement (NSSE), Student Speak Survey (SSS) and others targeting a specific group of students.

Student Health & Wellness (SHWC)
The goal of the SHWC is to provide campus health and wellness resources that enable the student to successfully achieve their academic goals and promote lifelong wellness. To achieve this mission we:

- Address primary medical and psychological health needs.
- Provide a quality standard of primary medical, gynecological, and mental health care for Illinois Institute of Technology students, with sensitivity to age, gender, disability, religion, culture, ethnic background, and sexual orientation.
- Provide quality support for health care through laboratory, insurance, secretarial, and referral resources.
- Provide health education to prevent illness, to teach self-help strategies, and increase awareness of potentially unhealthy practices so that students may choose their optimal healthy life style.
- Empower students through education and professional guidance to become self-directed and well-informed consumers of health care services.
- Adhere to established ethical principles and codes of professional practice, including patient confidentiality, privacy, dignity, and informed consent.
- Provide an environment of caring with a non-judgmental approach, to maintain an atmosphere of mutual respect, and to uphold and protect our patient’s rights in the process of health care delivery.
- Participate in the teaching of psychology externs, and collegiate nursing students to stimulate intellectual and clinical excellence in the care of our patients.

Student Success Committee
The Student Success Committee (SSC) is comprised of representatives from Undergraduate Academic Affairs, Financial Aid, Residential Services and Greek Life, International Center, Academic Resource Center, Student Accounting, University One Stop, and Student Access,
Success, and Diversity departments. Other administrative and academic offices are invited to attend meetings as necessary to add perspective on issues or individual student cases.

The committee reviews referred student cases to provide solutions without numerous “hand offs” or delays. Using a holistic approach, the committee can review all aspects of the student experience including academic performance, personal wellbeing, and even financial obligations, to provide the best outcome for each student. These solutions have helped guide students academically, improved academic performance, assisted students struggling financially, and helped students graduate.

Specifically, the committee has increased retention rates by reviewing and contacting non-registered students through consistent outreach and review. Based on student feedback, the committee has been instrumental in helping students succeed by offering solutions to help them achieve their educational goals.

6. **Credit Unit**

One semester credit hour represents one class hour or three laboratory hours per week. One academic year represents 30 weeks of classes, exclusive of final examinations. One semester hour represents 50 minutes of lecture or 100-150 minutes of laboratory per week. One academic semester year entails thirty weeks of classes, exclusive of final examinations.

7. **Tables**

Complete the following tables for the program undergoing evaluation.
Table D-1. Program Enrollment and Degree Data

Department of Information Technology and Management, Illinois Institute of Technology

<table>
<thead>
<tr>
<th>Academic Year</th>
<th>Enrollment Year</th>
<th>Total Undergrad</th>
<th>Total Grad</th>
<th>Degrees Awarded</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1st</td>
<td>2nd</td>
<td>3rd</td>
<td>4th</td>
</tr>
<tr>
<td>Current Year</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014-2015</td>
<td>12</td>
<td>25</td>
<td>45</td>
<td>37</td>
</tr>
<tr>
<td>PT</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>2013-2014</td>
<td>5</td>
<td>19</td>
<td>20</td>
<td>35</td>
</tr>
<tr>
<td>PT</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>2012-2013</td>
<td>9</td>
<td>10</td>
<td>20</td>
<td>46</td>
</tr>
<tr>
<td>PT</td>
<td>0</td>
<td>4</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>2011-2012</td>
<td>6</td>
<td>6</td>
<td>23</td>
<td>33</td>
</tr>
<tr>
<td>PT</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>2010-2011</td>
<td>5</td>
<td>7</td>
<td>19</td>
<td>16</td>
</tr>
<tr>
<td>PT</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>5</td>
</tr>
</tbody>
</table>

Give official fall term enrollment figures (head count) for the current and preceding four academic years and undergraduate and graduate degrees conferred during each of those years. The "current" year means the academic year preceding the on-site visit.

FT--full time
PT--part time
Table D-2. Personnel

Department of Information Technology and Management, Illinois Institute of Technology

Year\(^1\): Fall 2014

<table>
<thead>
<tr>
<th>Personnel Category</th>
<th>HEAD COUNT</th>
<th>FTE(^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FT</td>
<td>PT</td>
</tr>
<tr>
<td>Administrative(^2)</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Faculty (tenure-track)(^3)</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Other Faculty (excluding student Assistants)</td>
<td>5</td>
<td>18</td>
</tr>
<tr>
<td>Student Teaching Assistants(^4)</td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td>Technicians/Specialists</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Office/Clerical Employees</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Others(^5)</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Report data for the program being evaluated.

1. Data on this table should be for the fall term immediately preceding the visit. Updated tables for the fall term when the ABET team is visiting are to be prepared and presented to the team when they arrive.

2. Persons holding joint administrative/faculty positions or other combined assignments should be allocated to each category according to the fraction of the appointment assigned to that category.

3. For faculty members, 1 FTE equals what your institution defines as a full-time load.

4. For student teaching assistants, 1 FTE equals 20 hours per week of work (or service). For undergraduate and graduate students, 1 FTE equals 15 semester credit-hours (or 24 quarter credit-hours) per term of institutional course work, meaning all courses — science, humanities and social sciences, etc.

5. Specify any other category considered appropriate, or leave blank.
Appendix E – External Program Review Committee Final Report

External Program Review Committee Final Report
School of Applied Technology
Illinois Institute of Technology

Background
At the request of the Illinois Institute of Technology Board of Trustees, an external program review committee was assembled to examine the School of Applied Technology (SAT), its academic programs, faculty, administration, staff, facilities and students. The committee was comprised of the following individuals:

- Andrea Berry (Chair), Senior Vice President, Broadcast Media Services, Fox Networks
- Dr. Charles Czuprynski, Director, Food Research Institute and Professor and Chair, Pathobiological Sciences, School of Veterinary Medicine, University of Wisconsin
- Dr. Robert Friedman, Professor and Director of the Institute of Technology, University of Washington Tacoma
- Dr. Barry Lunt, IT Program Coordinator and Professor, Brigham Young University
- Dr. James Mohler, Associate Dean of Academic Affairs & Diversity and Professor of Computer Graphics Technology, College of Technology, Purdue University

The committee was on the IIT campuses on April 1-2, 2014. The committee or parts thereof, visited with various faculty, students, administrators and staff and examined facilities at the main, Rice and Moffett campuses. This brief report summarizes the committee's review of the school and specific feedback pertaining to institutional alignment, administration and staff, programs, English as a Second Language (ESL), research, faculty, students, and facilities. The document concludes with a section on suggested future directions.

Executive Summary
The committee believes that the programs of the School of Applied Technology (SAT) are well aligned with both the IIT mission and the needs of the industries they support. While there are areas for improvement and realistic threats that should be addressed, these are far outweighed by strengths and opportunities for the school and the IIT. The faculty, staff and administration should be commended for their ongoing efforts to form and organize the new school. The current programs are sound and have various avenues for growth and expansion. These impressions are supported by the materials and data provided to the committee, as well as the numerous interviews with administrators, faculty, and students that occurred during the two day visit to the three campuses and their facilities.

Institutional Alignment
- Creation of the SAT was insightful; the school significantly contributes to the IIT institutional mission and the employment needs of industry.
- The planned Center for Innovation seems to be an important part of IIT activities. The SAT also sees it as critical to their current and future mission.
- The SAT has the potential to serve as a hub or connector to many other disciplines at the IIT. It has the potential to synergize with several other programs on campus and is in a unique position amongst the other schools at the IIT.
Programs
Overall, each of the following programs is highly relevant to the needs of industry. All programs have high student placement rates and the overall average starting salary for SAT graduates is in-line with institutions having similar programs. All programs also appear to be profitable and benefit the IIT overall.

Industrial Technology and Management (INTM)
- A unique aspect of this program is that it assists working professionals to advance in their careers.
- The program has beneficial relationships with the City Colleges of Chicago, community colleges and professional organizations such as unions.

Information Technology and Management (ITM)
- The program’s strength is in the high demand area of forensics and cybersecurity.
- Due to the number of online courses offered (and the quality of them) there is a great opportunity for ITM to become nationally recognized.

Food Science and Nutrition (FdSN)
- The M.S. program hits a sweet spot for which there are few competitors nationally and internationally.
- There is an opportunity for FdSN to develop a high-quality, in-demand bachelor’s degree.
- Development of a Ph.D. program can be initiated with limited input and will increase the visibility of the FdSN program.

Office of Professional Development
- The ESL program is an important part of the Office of Professional Development activities. The current success of the ESL program, in part, derives from its being housed in a school such as the SAT, one that seeks to serve and collaborate with other academic units, has a broad vision, and has deep experience in providing a practical approach to English language remediation. If the program continues to be successful (and/or grows), the institution should be cautious about moving ESL out of the SAT.

This concludes the executive summary. The remainder of this document describes specific strengths, weaknesses, opportunities and threats related to each of the specific areas.

Specific SWOT Details
Administration and Support Staff
- Strengths
  - The support staff has much energy, passion, and many creative ideas. It is obvious that they function well as a team. It is likely they are the proverbial glue that holds together the SAT. The same behaviors are modeled and supported by the present dean.
  - The administrative staff serves as advisors to the students. The staff seems very flexible in doing what needs to be done. They demonstrate outstanding understanding of the programs, processes and procedures necessary to help students make degree progress.
  - Dr. Robert Brackett brings a unique set of experiences and skills to bear to the food program and is very well regarded within the food industry.
• Weaknesses
  o At many institutions, academic advising is done by professional staff that wholly focuses on advising. If significant growth occurs, having advising done by so many people – particularly faculty – may be a limiting factor to managing the growth and maintaining a high level of service and quality.
  o Quality and upkeep of the physical buildings was addressed as a major weakness. Restroom facilities, stained ceiling tiles, and other general maintenance items do not contribute to an environment that is aesthetically pleasing or inviting to prospective students, families or alumni.

• Opportunities
  o There are significant opportunities for growth in the programs and school.
  o Obtaining NCA accreditation, which will allow the institution to handle I-20 processing, should lead to even greater growth in the ESL program.
  o The SAT is in the process of hiring a dedicated recruiter that should help increase the visibility of the school’s programs and ultimately the number of qualified applicants and admits to the programs. This person would also serve as a liaison to the department of admissions.

• Threats
  o Dr. Robert Carlson, Dean of the SAT, carries a great number of titles and responsibilities. Is there a succession plan? What is the impact if there is significant growth in SAT programs (in which these responsibilities grow)?
  o Potential program growth could overload the infrastructure and personnel resources available. They already appear to be stretched thin with several people wearing multiple hats. The people involved seem to handle this well, but there is a limit to the number of tasks people can perform effectively.

English as a Second Language (ESL)

• Strengths
  o The ESL program is profitable and opens the door to other academic offerings within the SAT and the IIT as a whole.
  o Although ESL could be seen as an odd fit in the SAT, the leadership of the SAT has integrated it well and turned the program into a strength for both the SAT and the IIT.
  o Students spoke very highly of the program. Its existence in the SAT makes learning more relevant (and likely more motivating) for the students.

• Weaknesses
  o None noted or observed.

• Opportunities
  o If the institution becomes NCA accredited and able to grant I-20 visas, the program could grow substantially.

• Threats
  o Unmanaged growth could be a significant threat (i.e., the quality of the program could decrease; individuals could be over-tasked) if not adequately staffed.
IIT Department of Information Technology & Management
Program Self Study Report for CAC of ABET Accreditation

Research

• Strengths
  o The Moffett Center and the FDA funding are strengths for the college, as are the IFSH faculty who have a proven track record of garnering research funding.
  o The FdSN M.S. program is an asset that should contribute to a greater number of publications and/or grant proposals.

• Weaknesses
  o Industrial Technology and Management (INTM) and Information Technology and Management (ITM) have not historically participated strongly in research. This will need to change over time so that they become equal partners in the SAT and the institution as a whole.

• Opportunities
  o As INTM and ITM faculty participate more fully in the research enterprise, the overall profile of the SAT will increase.
  o There is an opportunity to raise the visibility of the SAT through graduate projects and graduate honors programs.
  o Within Food Science and Nutrition (FdSN), there is an opportunity to increase the faculty’s portfolio of research funding from industry and governmental agencies.

• Threats
  o There needs to be a consistent definition of research productivity and associated expectations. Without that, attracting faculty and faculty progressing through the tenure/promotion process will be difficult.
  o The FDA decision to not fund the nutrition program of FdSN is a challenge to that group. This increases the importance of pursuing and securing extramural funding.
  o The highly competitive environment for federal funding overall is a challenge to all programs and units.

Faculty

• Strengths
  o Adjunct faculty are very dedicated and qualified; they teach highly relevant content in the classroom; they are highly respected by students. Teaching excellence is evident based on teaching scores and they appear to be managed very well – they feel well connected and well respected.
  o The industrial experience of the faculty is a huge asset – and the guest lecturers (mentioned by faculty, leadership, and students) – are a unique and positive aspect of the SAT’s programs and courses.

• Weaknesses
  o There is an urgent need for more tenure track faculty in most of the SAT programs.
  o There is a lack of defined expectations for tenure track faculty (the balance amongst undergraduate teaching, research and service).
  o Marketing was acknowledged by the faculty as a significant problem. The IIT as an institution is relatively unknown within Chicago and beyond. The SAT and its programs are similarly unknown as widely as they should be. “IIT is a well-kept secret.” Branding and the identity of who the IIT is not well known.
Opportunities

- Faculty mentioned several areas that could be potential content areas that could be added as programs, concentrations or other programmatic aspects. These include: sustainability, environmental issues (grand challenges), resource management, and global impact issues.
- The IIT may want to consider finding ways to connect programs across campus through seminars, talks, etc. around broad themes (e.g., computing, engineering, science, management) that would draw faculty and students from traditional and non-traditional schools to create connections and spur synergies. IPRO could also be a vehicle to garner such connections. An indirect effect of this effort may be breaking down traditional barriers across disciplines or schools.
- There is an opportunity to improve the relationship between ITM and the Board of Overseers.

Threats

- Finding qualified tenure track candidates may be a challenge for some programs.
- As tenure track faculty are added, political issues may arise (adjunct versus tenure track faculty).

Students

Strengths

- Things that draw students to the SAT include: the city of Chicago, the reputation of the programs, the fact that faculty are industry professionals (both knowledge and the faculty’s networks). The students represent the institution and their programs very well. The students felt that the programs and faculty were personable, down-to-earth, and accessible.
- Special connections to organizations such as the IBEW, the FDA, and the food industry in general were specifically noted by students.
- Global partnership programs (such as the agreement with Spain) were perceived as highly valuable. A draw for international students are programs such as these that allow them to remain and work in the U.S. under OPT and CPT programs.
- Several students noted that the student organizations (CSCN groups) help them connect with one another and with the industry as a whole.
- Students receive very good advising (both professional and academic) before and during their time here.

Weaknesses

- Students said the career fairs and the Career Management Center did not really help them or include them. The best information and opportunities comes through the school and/or faculty and staff in the departments. The software (“Nacelink”) used at the Career Management Center could be greatly improved.
- Students acknowledged that the video quality of the online materials were sometimes poor. The resolution of the video as well as the syncing of the audio and video were often lacking. Students also suggested that they would like to have
access to online course materials beyond the end of the semester that they took the course.

- Students would like to be exposed to a wider range of industry tools. A specific example was that they were taught Oracle but would like to also learn Microsoft IIS or MySQL. Another example was the opportunity to learn Cisco technologies. Students suggested that the institution may be able to garner access to online materials or other things (certifications) that students could use to supplement their learning on their own.

- Opportunities
  - Development of undergraduate and Ph.D. food science programs.
  - Accreditation of the ITM program by ABET CAC could benefit the programs, students and their reputations.
  - ITM is an acknowledged Center of Academic Excellence in information assurance and cybersecurity, which allows application to the National Science Foundation (NSF) for Scholarship for Service funding. This funding could greatly benefit students, reduce cost of attendance, and provide career path options.

- Threats
  - Competing for jobs with graduates in the Chicago and northern Illinois region.

Facilities

- Strengths
  - The IFSH has strong facilities with unique capabilities. The Moffett campus pilot plants offer opportunities that few can match.
  - The Clinical Nutrition group is well positioned and has a very nice facility. They have the potential to be a draw both for students and collaborative research.
  - The Rice building has two very well provisioned labs, one for telecommunications work and another for cyber forensics. The faculty leading the labs have deep knowledge and influence in their areas of expertise.
  - The way that SAT has structured their online recording facilities for distance education has likely strengthened both the online experience as well as the on-campus experience (because on-campus students have access to the recorded online materials). Students have access to materials in multiple learning modes for different learning styles.

- Weaknesses
  - The IFSH pilot plants (i.e., BSL3) are a high cost item but offer extraordinary opportunities.
  - Having the food science students take classes on the main campus but go to Moffett for the microbiology lab is not optimal.
  - Space constraints are a problem, as is the aged nature of the available buildings.
  - The Rice building has no basement and limited storage, which is very constraining.

- Opportunities
  - IFSH has a large pilot plant area (Moffett campus) that has great potential, but it is outdated (equipment, building infrastructure) and would need significant refurbishment to modernize it. This is a potential fundraising item.
  - The Rice campus seems to have a lot of potential space for expansion.
Threats
- The space constraints on main campus may be a hindrance to the probable growth of the program.
- Balancing programs across the various campuses seems to be a challenge.

Future Directions
- Adding new tenure track faculty to the SAT is an imperative, particularly in light of the significant growth potential that the committee believes is imminent.
- There needs to be a succession plan developed for the dean of SAT, who has multiple responsibilities.
- If growth occurs (students and faculty) as the committee suspects, there may need to be a delegation of tasks and responsibilities by the dean to assist with that growth.
- A decision needs to be made about the future of the Rice campus and how it will be utilized.
- To assist the faculty in being more effective with grant writing and grant productivity, the SAT may want to consider using short-term consultants to conduct training on grant writing or sending faculty to grant writing workshops that are offered nationally. Faculty may need to be briefed on the services offered at IIT, such as the Office of Sponsored Research.
- The institution should invest in marketing and branding within the Chicago area, as well as nationally.
- The Office of Institutional Advancement should begin developing relationships with the alumni base of the SAT. Although the school is new, some programs with graduates have existed for as long as 17 years. Development-oriented relationships should be started immediately with alumni. Efforts should also focus on corporate and industrial donors who need to be made aware of the new school’s efforts and the graduates who could be beneficial to their companies.
Appendix F – Representative Comments from University Student Critiques, Spring 2015

ITM 301 Introduction to Contemporary Operating Systems & Hardware I

- The course is supposed to prepare me to become A+ certified. I learned nothing. I learned everything I know regarding this course online. Nothing from the professor.
- A fun enough course to introduce students to computer hardware and software. The TestOut platform is good.
- The class felt very scattered and without much structure.
- really helpful class. things learned actually apply in real life

ITM 311 Introduction to Software Development

- Good intro to Java.
- Lectures can be a little dry sometimes but overall fun.
- cool
- kinda demanding for a beginner course

ITM 312 Introduction to Systems Software Programming

- It doesn't make sense for the ITM curriculum to have 2 introductory programming classes. They are almost exactly the same except in different languages. ITM311 and ITM312 should be merged into one class.
- I learned a lot so I can't be too upset.
- material is not really clear

ITMD 411 Intermediate Software Development

- Dense course. Good. Wish I had more time to learn more.
- Learned about using Java for various menu driven programs.
- Course was great.
- Course covers many materials with in depth description and explanation provided from the professor himself and power points.
- There are a lot of software principles I see in this course that are relevant in a lot of development environments in the real world.
- This course provides a more in-depth look into Java programming. Even though this course is a requirement for ITM majors, this course is useful for those who want to delve further into Java after ITMD311 and ITM in general.
- Absolute necessity
- Course material was very good. Good transition from 311 class.
- cool
- covers very important topics of OOP that are not covered in other CS classes too

ITMD 415/515 Advanced Software Development

- Very useful course, much more interesting than I came in expecting. I have never experienced a greater hell than trying to debug a web framework.
- This course helped me understand JAVA EE. The professor showed real life examples which was very nice.
- A good and an extensive course, but it is a bit tedious for students who do not have previous work experience in Java and the only knowledge of Java they have is by the course 411 taken in previous semester. I feel now that 411 is replaced by 510, the level or coverage of topics must also be increased in 510 to bridge this gap.
- "This subject is way too lengthy and a bit of difficult, There should be more than (3 hours)1 class a week and should be extended to 2 classes. If we get more time to spend in the class we can explore more about the subject, but due to limited time is was not possible."
- I am fully satisfied with this course and is highly recommended because it can help you bag a decent offer.
- Difficult and Advanced Course. Lots of preparation and homework required.
ITMD 421 Data Modeling & Applications

- "Curriculum thoroughly covers Oracle SQL and its components. Typos and errors in the curriculum are occasional. Some coursework could be more concise, understandable. Uses the professors personal SQL server which had some major issues. A database lab from IIT may work better for this purpose, especially if it were managed by the school's staff."
- The workload was big between labs, homework, quizzes, and the final project. I personally don't like SQL. Sometimes the class server was down when I needed to get work done.
- I have a high knowledge of Oracle Developer and Data Modeling thanks to my professor through teachings in class, after class and teacher hours.
- Lectures can get a little confusing and boring, but good class
- The problem with this class is that its both an online and offline lecture. Meaning, she lectures non-stop for the sake of the online viewers, at the expense of in-class interaction. Now, the professor does answer questions, and she's really chill about stopping to do that, its just that, i feel in-class students lose some of the potential effectiveness of the professor from this style.
- excellent teaching methods

ITMD 434 Human/Computer Interaction

- This really does not need to be a 3-credit course. It could and should have been much faster, or been much denser.
- Course seems to be specifically structured by teaching professor. Hit or miss topics are covered.
- Not really sure what I'm supposed to be learning in this class, it seems like a waste of time.
- Homework Vocab quizzes don't correlate to any information covered.
- Course was great. Had fun in it.
- This class is not very beneficial.
- Class hour is too long.
- AWESOME!!!
- Class was good for learning human computer interactions.
- The course provides useful information on how to develop well-detailed interfaces for human and computer interaction. The homework and labs expands on what the professor says and provide various insight into the subtopics of HCI. The only problem I can state with this class is how some of the homework and labs are outdated meaning certain instructions were unclear.
- This course is fantastic, the labs give you real hands on experience. The homework's also provide you with in depth knowledge on how to handle real life situations.
- In class we are always learning something new Data Modeling & Applications, while also keeping up with current events.
- Learned a lot from this class.

ITMD 455/555 Intelligent Device Applications (iOS)

- I really enjoyed the course material. The way this class was structured though made going to class somewhat pointless. A screencast could have been made to show the code that was done in class, however, the class examples came straight from the textbook anyway.
- Learn the basis of Swift, following the book.
- I thought learning a very recent technology would be awesome, but I realized it is hard to find good material and it is even very buggy. The course in general is being satisfactory.
- There really needs to be a prerequisite for this course, for OOP programming. Too much of the class was focused on very elementary programming, and not enough of Swift specifically, as its own language. This was specifically because the course was intended to integrate "anyone", but this just meant that it was extremely slow and I'm going to have to do a lot more work on my own in order to adequately program with Swift, because I only learned the most basic functionality that the language allows for.
ITMD 455/555 Intelligent Device Applications (android)

- The course is good, we learn a lot by the labs and the final project can be interesting.
- Very interesting. Students who already know Java would be well advised to review the android tutorials in lynda.com before taking this class. Things will make more sense that way.
- Very good labs with in-depth details for each.
- I had a great time in the course.
- I am doing this class online. At beginning the video will go all the way to the end of the class. However the last 8 weeks, the video always cut short. I feel they shouldn't start the video that early. The first 10-15 minutes usually the professor was not doing anything. The professor tend to go over important stuff in the last 10 minutes, and the video always get cut right on the most important part of the class.
- "The professor is very nice. There is a high emphasis on the practice, which is good. But it would beneficial if the professor could give more instructions on how to use the textbook and details about some various ways to do things. The lectures aren't related to the textbook. And I was slightly confused when to read which chapter. During the classes, the professor normally teaches us how to do our labs, but it is also important to know why we should do it in this way, rather than how to do it in this way. And if we want to do them in other ways, how do we do that."
- Android application development is a really good area for ITM students to learn. This course should be provided in two sections, so that it isn't rushed.
- Mobile applications development is definitely a must know in today's technology world and this course provides good coverage of the android platform.
- Mr. Pappademas has awaked an interest in me to create an app which also connect to a server database and has a web interaction as well. This course was equally as exciting as 411-intermediate Java.
- Subject is very good for beginners. I being a beginner to the Android world enjoyed learning from basics to advance.
- Very Good Course. Basic to Advanced Android development covered.
- I would suggest you to give a little more advanced applications in the assignments.

ITMD 461 Internet Technologies and Web Design

- Easy assignment, please make the assignments tough so that students will learn more from it.
- Great class for ITM.
- I liked the format of this class with the realistic demonstrations.
- Mr Bailey should be allow to teach 562 (PHP) and 565 (Javascript) with the same fervor that he taught 461. Overall he is an excellent professor.
- "This course was very fulfilling! The curriculum for this course accomplishes the objectives in a logical order. Expectations are clear and consistent. Assignments very directly reflect the students understanding of the material. Tests and quizzes thoroughly cover the entirety of the material without excessive laborious effort. This course could be categorized as elegant."

ITMD 465/565 Rich Internet Applications

- I'll give it the generic rant I give for most programming courses: I'm not a whiz kid and it's really annoying that we cover all this high-level stuff and cover lots of it. I want to learn how to program, not what to program. I learned HTML & CSS by tearing apart websites and experimenting. That is much more effective than reading/learning about all the features (which I don't really care about anyway nor have the capacity to effectively absorb in one semester).
- This course is useful and I do learn it a lot from that,especially for job
- I know this is a difficult course to teach specially with the time period being so short to cover all the course syllabus in depth. Course syllabus can be made little short. Since, there is so much on my plate to eat.
- Worth your money !
- Well planned course
- Excellent! Learned a lot.
- Labs are a great idea ! Discussion forum is good for us to help between each other. No written exam is very good. Quizzes are a little hard. Maybe spend more time explaining Node.JS and Web RTC.
- Great course. Lots of learning.
- Highly Recommended
ITMD 465/565 Rich Internet Applications

- "Very nice course. I specially like some 'sips' of additional knowledge that we have learned such as computer graphics. I find the labs VERY useful. They are easier than the assignments but thank to them we can prepare a bit for the upcoming assignment. I suggest to use labs in ITMD562 too."
- Awesome course.
- One of the most useful courses I have taken at IIT
- "I would have preferred learning a little about javascript graphs and the best libraries available as that can be used in a lot of day to day tasks for data analysis. Leaning 3D was cool but I did not think it was so effective as we need to know a lot of math in order to understand and implement 3D. I would have also liked to learn a lot about mobile javascript as we are in the era of mobile applications. Overall the course was very informative and interesting."
- I wish this course had more to do with frameworks than covering basics in the initial courses. I believe 461 is a prereq which is about html, css, javascript & jquery except for the namespaces.
- "I think that the introduction of labs is a great idea. I also think that for the quizzes in class it would be better to be able to have some notes as if you are not familiarized with the programming language yet, it is difficult to remember the sintax. The course is hard but we end up learning a lot."
- JavaScript is soooooooo powerful and it will be the future in development. This class should always be provided to ITM students because it will give us the advantage when we are in our career field.
- I DIDN'T like 3D GRAPHICS. EW what a waste of time. OTHER THAN THAT OMG IT WAS MY DREAM COURSE! LEARNT SO MUCH. SINCE I WAS A KID, I WANTED TO LEARN ALL THESE STUFF AND I AM SO HAPPY THAT MY WISH HAS BEEN FULLFILLED AND ALL.."
- This course was difficult yet fun and kept me challenged. For me it was somewhat difficult to complete the assignments to their completion due to my lack of knowledge with Rich Internet Applications. It would be good for the instructor to give resources which could help with complete of assignment for topics not covered in the lecture. Or possibly do similar in class examples to what is needed in the assignments.
- Very good course to learn on client side technologies. Also the topics professor tried to cover was very good.
- The course is one of the best in ITM for web development as it gives very good insight to the latest technologies.
- The course was good with hands-on experience and live demonstrations of examples.
- The syllabus can also include angularjs framework as it is the requirement for every recruiter.
- Few more course material is required for understanding the concepts.
- I think the part that involves WebGL technologies is very interesting. However as this technology is so vast for being a small part of a course I think in the future it will be a good option to remove it and focus on MVC or MVW technologies such as Angular.js
- "It was great learning experience. I just wished, it had more of Node.js or any one JavaScript Framework."
- "This is best course i have taken till now. Professor is very good in his knowledge. It helps me a lot..!!"

ITMD 466/566 Service-Oriented Architecture

- Complete waste of my time and 3500$. Biggest issue was the over focus on memorization (per response 1 above). And then there was the issue of "groups". In my case, this meant being saddled with another student who had never built a web service (or anything in Java) before. This meant in the end that I had to do all of the work and when I tried to give him something to do, he did it incorrectly, but he was rewarded for my work all the same. Of course this was said "to be real world". Ummm, I work in the real world and I don't deal with (or hire) developers who have no experience. If you are going create groups, then it should be done on the experience of the students and not based on popularity. But all that aside, the real question is: What did I learn? 0.0. Thankyou IIT, I hope you enjoyed my check.
- Course was good, got a better understanding of XML and web services. We should have been given independent assignments because at the end, I ended up doing 70% of the work.
- It would be great to have 1-2 lectures on introduction to Design Patterns.
- Learnt a lot.
- Excellent Course. It provides an overall understanding of Web Services and it covers majority of technologies and languages.

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ITMD 469/569 Topics in Application Development: Big Data

- It is a ITMD subject with no signs of development. I felt cheated. If it was entire theoretical then it should have been in ITMT section. No hands on demonstration approach in Hadoop. Professor lacks interest in teaching. Overall I would suggest remove this subject in ITMD section and put in ITMT section so that students don't get mislead next time when they take this course.
- The course is purely theoretical. no coding, no tools learned. no labs, no assignments. just waste of time and money
- "Course content is very good but our professor did not pay attention to it and verbally covered topics what he felt suitable. As a result none of us is did any hands on Big Data technologies.
- Request: In future a Hadoop cluster can be made available to students so that student can do some hands on it."
- "Big Data as a course is a must in the curriculum. Its something that is in such a high demand and must be taught thoroughly to all students. And the course should especially cover programming.
- Sadly we were only taught theoretical knowledge, which im afraid is not enough to get a job in this field. "
- "No practical assignment provided through out the course, lecture not organized to cover the knowledge needed by the industry.
- There were no assignment and only quiz were provided which need only google search skills to get answers.
- Not satisfied at all from the course and there is no gain from the subject which we could reproduce in interviews or in industry applications."
- This course is a good introduction to the issues surrounding big data, and to several big data platforms students might encounter in the business world. The course could use a bit more hands-on experience with big data systems, but its focus on the platform-independent requirements for big data processing are valuable in the context of rapidly changing software and hardware environments. I would recommend this class to anyone who is interested in big data, and its implications for computer and network architectures.
- There has to be more software part and hands on experience rather than learning just the hardware part
- Giving us information that big company use gives us leverage on what to prepare us for when we seek out professions within them.

ITMM 470/570 Fundamentals of Management for Technology Professionals

- "My primary complaint about this class would be the split of undergrads and grad students. I am a grad student, and this class is taught very much directed towards undergrads - an attendance sign in sheet?? seriously? Also, the random assignment of groups using blackboard has not worked out well for me. I suspect that I am in a group with two undergrads....why am I paying graduate level tuition!? I frankly do not have the time or the patience to hand hold my group members through the process. I completed ALL of part 1 and 2 (50% of the project) without any input from them, due to their complete lack of response. Coordinating a meeting with them was attempted multiple times - they either did not respond or canceled at the last minute. When I sent the final budget for them to review and asked for very specific feedback/input I got extremely vague responses (a week after sending it to them). Essentially the best part of this class is that it wasn't that much work (compared to my other classes) and it checks off a box so I can graduate. "
- It was ok.
- "The course content was very useful and presented in a way that was easy to understand. I also liked the structure of the class with regard to the planned lectures and discussions. The reason I scored this course at a 3 is because throughout the semester I felt like there was a lack of communication on some aspects. First, as an online student, it was frustrating not knowing who to direct my questions to--the TA or Madeleine. And there were several times when either received no response or I received a response that did not address my question. Second, the team project was a bit chaotic. I think it would be better to offer an individual final project for people who would like to because coordinating with my group members was extremely difficult--people either did not respond to emails, waited several days to respond, or didn't make an effort to make team meetings. "
- overall you learn a lot that you think you knew
- Very informative, gave a good look into the IT profession.
- This course is a perfect blend of Managerial skills and IT.
- "Very practical. I think it will be very helpful in my career."
ITMM 471 Project Management for ITM

- “This class provides some of the material needed for a PM (speaking from some experience), but I don't see a lot of this information necessary or even relevant especially with the growth of Agile methodologies.
- A couple of colleagues and myself thought that a lot of the class was either common sense or something that we would never see be useful in a real situation.
- Also, the homework in the class did not help me understand what it is to be a project manager. It made me think that I never want to be a project manager especially if you have to BS a lot of the content in order to fit the "requirements".
- I feel like this course was a complete waste of money due to my professor. I currently intern in the IT corporate world and I am very scared to do any sort of project management. I feel like this has slightly crippled my future. And all I did was waste thousands of dollars.
- This class is horribly unbalanced in its workload versus what we learn. It had four huge homework assignments, a midterm, a rough draft, a team project, a webinar, a final paper, and a final exam. This class should be limited to either or, not all of the above.
- "I am a student on campus, my whole group for the final project where in the online course. They excluded me from the work. I learned nothing and I fear that they will try to have my grade reduced even though they did not contact me or share any necessary documents with me. Do NOT mix the on and off campus students for the final projects. Additionally, as a non-ITM major who is taking this class for an ITM minor, I would have been better suited taking the business equivalent of this class. I learned nothing more about IT which is why I was minoring in it. If I needed to learn more about ROI, Budgeting, Scheduling, Team Motivation, etc., I was better off taking an IPRO."
- I think the course itself is very self-explanatory and self taught. Besides a few definitions and equations a lot of the material has been learned in a class or another. It just was a very boring class, many students would be sleeping in the class.
- I feel this course is important and pertains to any major. This course teaches how to manage teams and also how to become a manager itself. These topics can be used for any individual that wants to rise to a higher position in any job.
- This course is broad and it's not providing detailed examples or simulated IT projects to manage.
- It's an interesting course, some is common sense while some is not. I did learn project management techniques through this course.
- This course prepares us for working as a team leader and to adjust decision making to best fit budget and schedule, while also maintaining the workers and project.
- Very useful course; coursework was normally easy if one paid attention during the lecture. Helped to understand how to structure projects in the future.
- Seems like material that should be fairly common sense.
- One the 3 best (ITM) courses offered to undergrads.
- Wish there was more homework related to project managing. The homework assignment were very helpful to opening my mind to think like a project manager. Just wish there were more homework to gain more knowledge.

ITMM 482/582 Business Innovation

- “The course is required for my program, but I can't see why. There are two one-hour classes every week. However, the professor can only spend about 10-15 minutes with each group in each class, not to mention that we had several days off. Besides the project, our assignments were to read articles and answer questions. But there isn't a clear explanation about how to answer them, nor were we taught much related. And there weren't sample answers for the questions. The only feedback that I got was something like "Not In-depth". If I lose points because my answers were not thoughtful, I would like to know which aspects I should improve, how an in-depth answer would look like. I talked with the TA as she does all the grading, but the only meaningful thing she mentioned was not enough citations to the article. I still don't know what she is looking for, what kind of answers would get full credit. There isn't a correct answer to everything, especially in an innovation class. But the requirement is so unclear that I don't know how to meet the requirement."
- The course is good. It challenges me to think and be innovative.
- No issues with the course in particular, she has mentioned switching up the material which would be helpful as the modules are repetitive.
ITMM 482/582 Business Innovation

- "When I first took this course I thought Business Innovation had a broader horizon. But then it was simply confined to Distance Learning, which was not as appealing to me which I thought it should have been. It is an innovating subject, it should let the student choose their own topics."
- garbage book, but useful class to take

ITMM 485/585 Legal & Ethical Issues in Information Technology

- The professor reads off the slides, almost verbatim. The slides should be a framework for the class, but the professor seems to constantly rely on the slides as a crutch. Ray Trygstad seems to be an intelligible person; not an intelligible lecturer. Using Blackboard for online class participation is a terrible idea. I can understand using Blackboard might be an administrative decision on IIT's behalf; but don't force the students into using a broken interface that directly impacts their grade. Mundane blog posts about the world around us, do nothing for my development as an IT professional. I had high hopes for this class, but cannot get past the way this class was structured. The class seemed generic and not one I can recommend to anyone, ever.
- Ray has done a good job of making a class that could be incredibly dull, very interesting. The biggest thing I enjoy about this course are the external articles/videos/examples that Ray gives for every lecture. Overall a very informative course.
- I think this course would be better taught as discussion based than lecture based.
- Very interesting class, everything I thought it would be.

ITMO 433/533 Enterprise Server Administration

- Useful information on Server 2008
- We were learning Windows server 2008 when windows server 2012 has been out of 3 year already. By the time I graduate with my masters degree, Windows 2008 will be dangerously close to end of life.
- Out of all the courses I have taken in the past 4 years this class is by far one of the classes that I have learned the most and can apply the course material to real life and future work.
- This course provides good hands-on experience in Windows Server administration. I would recommend the class to anyone who wants to become a Windows system administrator, or who wants to develop Windows applications and gain a better understanding of the environment in which their software will operate.
- excellent teaching methods
- Probably Windows Server 2012 should be thought instead of 2008 since some students have about 2 years of studies which potentially put them behind.

ITMO 440/540 Introduction to Data Networking & the Internet

- The projects really helped understand the coursework. The homework assignments truly prepared me for the exams.
- I feel like the course is far above the introductory grade. As many things that have to be crammed in is unacceptable. Got into way to many specifics that do not matter or hold weight in the IT world today. Keep up with current technologies and do not dive into 90s and early 2000 technology.
- really didnt like this class. uninteresting, boring, no idea how ill use this in the future
- Not my favorite course, but still very interesting.
- "The course was very comprehensive and discussed the topics in thorough detail. The workload was unexpectedly heavy and demanding. This course deserves separate lab hours. Much of the coursework was perceived by many of the students as busywork. The workload and style of work was not consistent with the other courses in the ITM program."
- I believe that this course is essential to the program, for we have very little to no Networking experience coming out of the program, unless students make an extra effort to do so. If anything, I believe an advanced version of this course being required would help a lot of students better prepare for real world jobs they may encounter.
- Good course
- The online portion of the course was not that great. I had trouble following the material because the person controlling the video was not always moving with the teacher and it was hard to follow the material when she was teaching it. There were multiple instances not just one time.
- "It seems like half the course requires you to get an understanding over how to use Wireshark, and the other is the innerworkings over Wireshark through a draconian-like means of teaching."
ITMO 440/540 Introduction to Data Networking & the Internet

- When teaching Wireshark and integrating it into the class, it doesn't feel like a smooth transition. It's two clear, cut and dry objects whereas the course itself should feel like the two objects should be one."
- I feel like if we had the table for PA 6 ahead of time that would have helped us at the end when we had to put all the data in.
- Very intense, extreme learning curve, tight scope and absolutely practical
- Really helpful and interesting! I'd take this course over and over again! It covered a lot of interesting topics that are going to be useful in the field of Data communications. It really inspired me to go further and discover if this might be a potential career for me.
- Although the pace is on the slow side, it's probably best that way. The material learned isn't rushed, and allows the student to maintain the information taught, rather than be given something at such a pace that they'll have lost it by the time their next class starts.
- May be a lab with this course would be an additional advantage.

ITMO 441/541 Network Administration & Operations

- "Good course to have a general idea about protocols on the application layer. I suggest to use the first day of class to explain the basics of Linux (or CentOS) commands. I was new to Linux and I would have liked to have that. Some slides with commands and their meanings would be perfect. Instead of the research paper, I suggest making the students do a final project of configuring a Linux machine to perform a certain function (let's say, a proxy). I think this would let us put in practice what we've learnt throughout the course."
- Course not so great, could be better if the lectures are held in a computer lab that would allow us to ask doubts and questions during the class only.
- Learn how to make two virtual boxes connect using various networking schemes.
- This course is excellent. Then again the course is only as good as the instructor. Loved it.
- Excellent course. I love courses with Labs where we can apply what we have learned.
- Very Good
- Some labs are too broad, but still good. Slides can get a little boring.
- Subject matter was very informative and easily understandable. I can apply my new found skills to my everyday personal and professional encounters
- This course includes a great deal of hands-on experience for administrators of various network services. I would recommend the class to anyone who intends to work with such services, or anyone who wishes to gain a deeper familiarity with network applications.
- Best. class. ever. learned how to linux better than ever. also, learned 101 ways to fail at linux.

ITMO 450/550 Enterprise End-User System Administration

- Overall I think this is a great course that gives students great experience to students looking to be sys admins.
- Learned a lot and was able to sharpen my Windows config skills.
- It was good to learn user side support for Windows. One feedback I would have for instructor, would be to setup the lab as a faux office environment and implement the labs where we had to manage multiple departments in a business environment.
- The class was very interesting. I learned a lot about Enterprise systems administration. The class labs could be improved a bit for the next semester but overall the labs + lecture go hand in hand and make for a great learning experience.

ITMO 454/554 Operating System Virtualization

- "Just about everything in this course is relevant to what students can expect to see in the field. The hands on labs teach us to set up completely virtualized environments from start to finish.
- Probably one of the most valuable classes I have taken here at IIT, in regards to ability to implicate in the real world work place. Highly recommend."
- The final project needs more time for students to work on it. Otherwise great class.
- First virtualization course, so difficult to compare. That said, I learned a tremendous amount. Very happy with how authentic the labs were, in establishing, running, maintaining VMs
- important course, should become a part of CYF course
ITMO 456 Introduction to Open Source Operating Systems

- Although the assignments take an extremely long time to accomplish, this course results in a high learning curve due to the teacher-to-student interaction with finishing labs.
- basic knowledge but applicable & needed
- It's a good course and it's a great way to introduce students to Open Source.
- Too much busywork in the homework makes it hard to learn anything useful. While I understand the need for beginners to do the basic busywork, it would probably be more beneficial to offer an intermediate level class and offer students the choice of a intro or intermediate level class.
- Absolutely necessary but it can split into 2 levels for a better understanding and appreciation.
- "The class is great but some of the homework needs to be structured a bit differently. I feel that the questions from the book sometimes don't make sense and leave you on a single question for a long time. Also maybe the classroom server could be hosted by SAT allowing for students to SSH in and perform assignments."
- Lots of hands on labs very good for comprehensive knowledge of Linux

ITMS 484/584 Governance, Risk and Compliance

- Not very interactive.
- The content of the course is very good. Does what it aims to do.
- Nice and fair.
- The course held my interest and was useful.
- Great class.
- This is an excellent course. A great addition to the Security coursework within the ITM program. Many methodologies were covered and explained in great detail. This is a must take for anyone interested in information assurance management.
- I wish we were able to do some examples using different law and regulation and how are they applied or how we choose which standards of governance/frameworks to use to be secure.
- important addition to any IT course, proper documentation is a crucial skill in any job course
- Professor Goins is very knowledgeable in the topic. Her experience in the field does add a level of confidence to what we are learning in the class. I feel her class will prepare us for situations we might encounter in the future.
Signature Attesting to Compliance

By signing below, I attest to the following:

That the Department of Information Technology and Management has conducted an honest assessment of compliance and has provided a complete and accurate disclosure of timely information regarding compliance with ABET’s Criteria for Accrediting Computing Programs to include the General Criteria and any applicable Program Criteria, and the ABET Accreditation Policy and Procedure Manual.

C. Robert Carlson
Dean’s Name (As indicated on the RFE)

[Signature]  June 30, 2015
Signature    Date