



SCHOOL OF ENGINEERING AND TECHNOLOGY

INDIANA UNIVERSITY-PURDUE UNIVERSITY
Indianapolis

Purdue School of Engineering and Technology

Master of Science in Technology Student Handbook

Department of Computer Information and Graphics Technology

August 2018 Edition

<http://engr.iupui.edu/main/academics/grad/index.php>

<http://engr.iupui.edu/departments/cigt/grad/index.php>

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1. Introduction

Welcome to the Master of Science in Technology (MST) degree program at IUPUI. This handbook describes the requirements, policies, and regulations for the MST degree program offered by the Purdue School of Engineering and Technology at Indiana University-Purdue University, Indianapolis (IUPUI). The guidelines and procedures in this handbook will help you in moving smoothly through your studies, in preparing your Plan of Study (see Section 6), and in meeting the degree requirements for completing the degree and graduating.

The School of Engineering and Technology offers graduate instruction leading to the Master of Science (M.S.) degree that enables you to concentrate your professional studies in technology by pursuing an interdisciplinary selection of classes relevant to your interests or in any of the areas of focus, concentrations, and/or certificates that the school offers. Concentrations have specific Plan of Study requirements and are listed on your transcript after graduation.

Department of Computer Information & Graphics Technology
Concentration: Information Assurance & Security

Department of Engineering Technology
Concentration: Facilities Management
Concentration: Motorsports

Department of Technology Leadership & Communication
Certificate: Human Resources Development

The MST program also offers either a directed project or course-only option.

When you have completed all degree requirements, the Purdue University Graduate School will grant your degree. The Purdue School of Engineering and Technology Graduate Programs Office (<http://www.engr.iupui.edu/gradprogs/>) works closely with the Purdue University Graduate School in West Lafayette (<http://www.gradschool.purdue.edu>) and the IUPUI Graduate Office (<http://www.iupui.edu/~gradoff/>) in coordinating and administering graduate Technology degrees, certificates, and concentrations.

Additionally, if you are an international student you will have contacts with the Office of International Affairs at IUPUI (<http://international.iupui.edu/>) regarding visas and immigration requirements. The School of Engineering and Technology Graduate Programs Office in the Dean's office in ET215 can direct you to the appropriate office for specific questions.

After admission, your first major task is to contact your academic advisor to develop your Master's Plan of Study before you earn 15 credit hours. The Plan of Study defines the academic program leading to the degree. Meet with the graduate program contact in your department to address questions about requirements, plans of study, or other academic matters.

2. Applying for Admission

This section provides an overview to the requirements, types of admission, time limits and opportunities for financial assistance relative to graduate study in the MST degree at IUPUI.

Visit the School of Engineering and Technology graduate programs [website for application information](#) for domestic and international applicants.

To apply to the MST degree program, submit the following:

- a form on which you provide additional information
- an electronic IUPUI graduate application for admission to the Graduate School
- three letters of recommendation
- a 400 word statement of purpose indicating your career goals and purposes for pursuing graduate studies
- official original transcripts of all college coursework
- results of the graduate examination required by your desired concentration, focus area, or certificate (as applicable – see Chapter 8)

If you are pursuing the interdisciplinary path of the MST, submit the GRE score only if you have not earned a BS degree from a USA regionally accredited institution. (Even if you hold a degree from a USA regionally accredited institution, you are welcome to submit the GRE score if you choose to do so.)

If you are an international applicant whose first language is not English, also submit official TOEFL or IELTS scores. Minimum test scores required for admission are listed in the document "[Frequently Asked Questions](#)" found at the Purdue School of Engineering and Technology Graduate Programs Office application website for international applicants.

After you submit all required application materials, an admissions committee in the relevant department reviews the materials to determine if they meet the MST admissions criteria.

Departmental graduate admissions decisions typically are based on a combination of the quality of your undergraduate work, graduate examination scores, letters of recommendation, and the overall potential that each student presents. The admissions committee examines your background, reasons, and goals for seeking the degree and determines whether you would be likely to be successful in the program.

The admission committee recommendation may be one of the following:

- Admission without Conditions for Continued Enrollment
- Admit with Conditions for Continued Enrollment (these conditions will be specified)

- Recommend applying for Graduate Non-Degree status and taking courses to demonstrate ability to successfully pursue graduate level work (you must reapply for admission to the School of Engineering and Technology after fulfilling conditions specified), or
- Deny.

Incoming students who have a "B" (3.00/4.00) or better grade point average in prior study are typically admitted without conditions.

After this initial review, MST admission recommendations are forwarded to the School of Engineering and Technology Associate Dean for Graduate Studies for review and recommendation to the Purdue University Graduate School for official approval of admission.

Financial Assistance

Availability

A limited number of teaching assistantships, graduate assistantships, and/or research assistantships, which include a modest stipend and tuition waiver, are available from each department within the MST program. If you are interested in an assistantship, direct your request to the Graduate Chair of the relevant department.

Assistantship Appointments

In order to provide opportunity for you to progress satisfactorily toward your degree objective, graduate appointments will ordinarily be offered for no more than one-half time and for a maximum of two (2) academic years. Renewal of graduate appointments for additional time will be based on satisfactory performance in the position and academic progress toward Plan of Study requirements, as well as the availability of positions.

Teaching assistantships (TA) and Research Assistantships (RA) include a tuition waiver during the semester of the assistantship. Normally teaching assistantships are not available in the summer. However, if you have a teaching assistantship in the spring and the following fall semester, a tuition waiver for the summer is still available to you.

Assistantships do not cover the cost of student fees assessed each semester. You will be responsible for those fees.

3. Getting Started After Admission

Once you have been formally admitted, the School of Engineering and Technology Graduate Programs Office will send you an enrollment notification by U.S. postal mail or by e-mail.

If you have questions regarding advising and registration, contact your department.

Your IUPUI e-mail is the primary mode of communication that the Office of Graduate Programs uses to communicate with you. If you typically use another e-mail account, set up your IUPUI account to forward messages to your most-commonly-used account.

To be prepared for registration, review Chapter 8 in this Handbook to learn about the program, its requirements, and the courses. In addition, consult the following:

- Schedule of Classes. The official Course Offerings for each semester are accessible in the Student Center area of One.IU (<https://one.iu.edu/>), the gateway to the university's web-based Student Information System (SIS). From here, you can search for the Schedule of Classes as well as the course registration system. Activate your IUPUI username to register. If you need assistance with registration, contact your advisor.
- Consult with your advisor to decide which courses to take in your first

semester. When you have your class schedule prepared and are ready to register, go to One.IU <https://one.iu.edu> and search for Class Registration.

4. Understanding the MS Technology Degree and Requirements

The Master of Science in Technology (MST) program requires a minimum of 33 credit hours. It is designed so that graduates holding a B.S. degree in a technology discipline or a related area can complete their degree as either a full time or a part time student. The program can typically be completed in four semesters (two academic years) of full-time work.

The MST degree has two options: Directed Project or “*Course Only*”.

- The Directed Project option requires 30 hours of coursework and three credit hours of an individual Directed Project (see Appendix A for details).
- The “*Course Only*” option requires 33 hours of coursework.

All plans of study (except areas of concentration) for the MST require you to complete nine credit hours of core courses, as listed in the table below. (See section 8 of this Handbook for concentration Plan of Study details.)

Credit Hour Requirements	“ <i>Course Only</i> ” Option	Directed Project Option
Required Core Technology Courses <ul style="list-style-type: none"> • TECH 50700 Measurement and Evaluation in Industry and Technology • OLS 57100 Advanced Project Management or TECH 50400 Motorsports Project Management 	6	6
Related Area of Study (see note)	27	21
Directed Project	None	3
Total Credits	33	30

Note: The related area of study must include graduate level courses from an approved course list offered by Technology or other departments. See your academic advisor for requirements in your focus area, concentration, or certificate. More than 50% of all the coursework must be from a Purdue School. Some course numbers are pending approval at this time.

Choosing the M.S. Directed Project Option

If you wish to pursue an independent research project in your area of interest or specialization, while under the direction of an academic advisor, select the Directed Project option. You will take 30 hours of coursework in addition to the directed project, which is worth three credit hours. See Appendix A for complete Directed Project information.

Examination Requirement

If you are completing a directed project, you must pass a final oral examination in order to graduate. You will take this public exam during the session in which you have declared candidacy, usually the last semester before graduation. Your examining committee will conduct the examination and evaluate mastery of content related to the plan of study. A second purpose of this oral examination is for you to defend the directed project.

Schedule the final oral examination with your advisor at least three weeks prior to the date of the examination. If your performance is not acceptable in one or more areas, the examining committee will specify what you must do in order to eliminate deficiencies.

Members of the Examining Committee

The examining committee will normally include the members of your advisory committee. The Dean for Graduate Studies may appoint additional members. The advisory committee chairperson (the major professor) may recommend additional members for appointment.

Choosing the “Course Only” Option

In consultation with your advisor, you may choose to complete 33 hours of relevant courses in order to earn the MST.

Completing the MST within Time Limitations

If you take courses on a full-time basis, you can typically complete the degree requirements in about two years. However, if you elect to take courses on a part-time basis, that choice will extend the time to degree completion.

We expect that you will complete the degree in five years from the time you first enroll.

If you do not enroll in courses for three consecutive semesters, you may be required to submit a new Plan of Study or may be dismissed from the degree program. In this case, you will be automatically placed in inactive academic status.

Re-enrolling after being placed on inactive academic status

If you are placed on inactive academic status and you wish to re-enroll, submit an IUPUI graduate application plus one current recommendation from an MST faculty member. You do not need to submit the other supporting application materials.

After submitting this application for re-admission, wait for the Purdue University Graduate School to approve it officially before enrolling for classes. If you enroll in and take a class before the Graduate School approves your new application for re-admission, those courses will be considered invalid and will not count toward the MST degree.

Achieving minimum grade requirements

To be in good academic standing, you must maintain a cumulative grade point index of at least 3.00 out of 4.00 in the courses on your Plan of Study.

If you are not in good standing at the end of a semester, you will be automatically placed on the academic checklist and sent a warning letter.

If you are on the academic checklist, you must meet with your advisor and complete the form “Request for Temporary Checklist Clearance” so that you can register for the coming semester.

If your cumulative grade point index remains below 3.00 at the end of the succeeding semester or summer session, you will be placed on probation, which means that you may not be able to register for further graduate courses until the Technology Graduate Committee reviews and approves your case.

If you take a course more than once while enrolled as a graduate student, only the most recent grade received in the course will count in computing the grade point average. Transfer courses are *not* included in the computation of the cumulative grade point average.

To earn the MST degree, you must achieve a final cumulative grade point index of 3.00 or higher in courses that are on the Plan of Study. If you earn a grade of “F” in a course that is on the approved Plan of Study, you must repeat the course and receive a minimum grade of C or higher.

Demonstrating English Language Proficiency for International Students

Taking the English for Academic Purposes (EAP) placement test

According to IUPUI policy, most international students who are non-native speakers of English must take the English for Academic Purposes (EAP) Placement Test prior to registering for classes, even if you have taken the TOEFL.

Your letter of admission from the Office of International Affairs will indicate if you are required to take this test. If you obtain a TOEFL iBT score of 100 or higher and obtain an IELTS score of 7.5 or higher, you do not have to take the EAP test.

You are required to take all of the courses the placement test results determine and receive passing grades in those courses. You must begin taking the first English language course in the first semester of enrollment and complete the requirements in sequence before graduation.

One exception applies: If you are placed into English G013 “Reading/Writing for Academic Purposes,” you may replace G013 by taking TCM 46000 “Engineering Communication in Academic Contexts”.

If you do not complete these English requirements, you will not be approved for graduation.

If you believe that the results of the first EAP exam do not reflect your English abilities accurately, you may take it a second time within the first two weeks of beginning classes. If you decide to retake the EAP examination, the results of the second exam will determine your placement. A third examination will not be an option.

Completing the SPEAK Test (for International Graduate Teaching Assistants)

If you are a non-native speaker of English, you must take a test relating to your oral English proficiency before you are assigned duties that involve direct student contact (teaching assistants, laboratory assistants, graders, and tutors). You must take and pass the SPEAK Test, a nationally standardized test, before you are given an academic appointment. If you are not able to obtain the required minimum scores, you will take an ESL course, G020 “Communication Skills for International Teaching Assistants” (3 units) and take the SPEAK test again before you can accept your appointment.

5. Creating a Master's Advisory Committee

Selecting a Major Professor/Advisor

You will be assigned a temporary advisor upon admission who will help in establishing a timely and effective initiation of your program. Once you start your program and have taken a few classes, determine whom you would like to serve as your major professor and academic advisor. Choose a major professor before the end of your second semester.

Each graduate degree Plan of Study is unique to the individual student and his/her background, experience, and degree objectives. To guide the development of a Plan of Study, select a major professor (advisor) to chair your advisory committee and assist you through the program. The major professor will become the most important contact person, and the major professor/student relationship must be a mutually acceptable one. The major professor serves as your advocate, mentor, and supervisor.

This person should be associated with your area of specialization and must have a Regular (R.1, R.2, R.3, R.3A, R.5, R.5A, R.6) or Special 1 (S.1) Appointment from the Purdue Graduate School. (See appendix C to find a list of approved Purdue Graduate School professors in Technology at IUPUI).

Selecting an Advisory Committee

You and your major professor will select an advisory committee. The duties of that committee are to assist you in preparing the Plan of Study and to offer advice during your graduate work. Your initial advisor should initiate you becoming acquainted with potential faculty members to serve on your advisory committee.

When you complete your Plan of Study (see Chapter 6), you will also complete the part of the form that lists the members of your advisory committee. Discuss the Plan of Study with your preferred potential advisory committee members and secure their permission to list them on the Plan of Study before you submit the plan for signatures. These people also need to have Regular (R.1, R.2, R.3, R.3A, R.5, R.5A, R.6) or Special 1 (S.1) Appointments. (See Appendix C)

The advisory committee consists of three members of the graduate faculty. The major professor and at least one other member should be from the School of Engineering and Technology graduate faculty (see Appendix A). The third member may represent a related subject area from your Plan of Study. This member must also be a member of the Purdue University graduate faculty. Members of the committee need not be faculty with whom you have taken course work. Contact your academic advisor for recommendations for appropriate graduate committee members.

A co-advisor may be designated when advantageous and where it can build faculty experience in advising. If your Plan of Study and/or research project would be significantly improved by the expertise of a faculty member or a person outside of the university, you and your major professor may request consideration for special certification for such service.

Such requests require a rationale and description of the expertise. Rout the request to the Purdue Graduate School via the School of Engineering and Technology Graduate Programs Office (ET 215).

If possible, begin selecting your advisory committee during your first semester and be sure it is complete by the end of your second semester if you are a full-time student. The committee will help you develop the Plan of Study and review/approve your directed project proposal, if applicable, which must be approved before work on the project may begin.

6. Completing the Master's Plan of Study

Faculty members in the MST program believe that advanced study should be tailored to the individual and his/her professional and intellectual objectives. Thus, the Plan of Study is unique to each student's needs and desires.

To facilitate an individually tailored program, each Master's degree Plan of Study consists of a primary area and one or more related areas. (Both the primary area and the related area are based on the relationship of the course content and not necessarily on the departmental course prefix.)

Developing the Plan of Study begins when you register for your initial courses. Your advisor and/or major professor will discuss your background, interests, and degree objectives as you prepare for the first enrollment. The major professor will also recommend possible related areas and advisors. Major professors should maintain a list of potential IUPUI courses, and appropriate faculty contacts, relevant to their areas, in order to assist graduate students in developing their Plan of Study.

The Master's Plan of Study form (GS Form 6) must include all courses you will take to meet the degree requirements. (See Appendix B and refer to website [Forms for Students](#)). Include the names for the primary and related areas of study; the course number, course title, and credits for each course; and the date when the course was or will be completed.

Each member of your advisory committee and you will sign the Plan of Study. After review, the Dean for Graduate Studies also signs the plan. The plan is then submitted to the Graduate School for formal approval.

You and your major professor should periodically access the approved Plan of Study and review your progress towards completion.

After an approved Plan of Study is on file, committee and course changes can be made at any time by completing the appropriate forms.

Completing Core Course Requirements (Primary)

All Master of Science in Technology plans of study will have a primary area of nine credit hours including the following core courses.

- TECH 50700 Measurement and Evaluation in Industry and Technology
- OLS 57100 Advanced Project Management or TECH 50400 Motorsports Project Management

If you need to request an exception to these courses, discuss acceptable substitutes with your major professor.

Completing Related Area Requirements

Each Plan of Study must include 21-24 semester hours of courses from at least one Related area (21 if completing a directed project, 24 if pursuing a “*course only*” option). Related area courses are based on your focus area (such as Electrical and Computer Engineering Technology-ECET, Mechanical Engineering Technology-MET, Computer and Information Technology-CIT, Leadership/Human Resource Development-OLS/HRD, or Technical Communication-TCM) or area of concentration (listed in Chapter 1 of this Handbook). Each Related area ideally should have a faculty representative on your advisory committee.

If pursuing a concentration, see Chapter 8 of this Handbook to learn about the course requirements for the concentration you wish to pursue.

Undergraduate credit

Effective in Fall 2016, no courses below the 500 level will be permitted on the Plan of Study.

Independent Study credit

You may include a maximum of 6 semester hours of independent study credits in your Plan of Study.

Full-time study requirements for International Students with F-1 visas

To maintain F-1 visa status, you must enroll full-time (at least eight credit hours) each fall and spring semester. You do not need to enroll in summer semesters, but you may. Additionally, you are allowed to enroll in one on-line course each semester except for the final semester of study, during which you cannot enroll in an online course.

Determining if Other Courses Can Be Included in Your Plan of Study

In addition to the courses you plan to take while earning the MST, you may be able to apply courses you have already taken to your Plan of Study. These additional courses may include:

- undergraduate excess credit from graduate level courses,
- transfer credit, and/or
- post-baccalaureate registrant credit (Graduate Non-Degree - GND).

You can include up to 15 credit hours of courses (total) in these three categories in your Master’s Degree Plan of Study. Only 12 of these 15 credits can come from Undergraduate Excess Credit and/or Post Baccalaureate Registrant (GND) courses.

Details about each of these categories follow.

Including Undergraduate Excess Credit

If you earned your undergraduate degree at IUPUI, and if you took 500-level graduate courses in excess of your undergraduate degree course requirements, you may apply a maximum of 12 semester hours of such credit to your Plan of Study if the courses meet the following conditions:

- You declared the course as graduate work at the time that grades were filed for that semester.
- You took the course during your senior year;
- You received a grade of at least "B" in the course;
- The course was designated as a graduate course;
- You performed your work in the course at the level required for graduate students in the course, and
- Your advisory committee approves including these credits.

Including transfer credit in your Plan of Study

You may include a maximum of half the required course credit hours (15) earned at another accredited institution, or from any non-Purdue schools at IUPUI, in your Plan of Study.

Graduate School policy states that all courses transferred

- must be acceptable for graduate credit at the school at which they were taken,
- must not have been used to meet the requirements for another degree, and
- must have been completed with a grade of "B" or better.

To include these transfer courses in your Plan of Study, submit to your advisor a catalog description of the course and an official transcript showing completion of the course with the grade received ("B" grade or better only).

Grades from transfer courses will not be included in computing the graduate GPA. Your advisory committee must approve inclusion of these courses in your Plan of Study.

Including Graduate Non-Degree Credit (Post-Baccalaureate Registrant Credit)

The Graduate School has created an enrollment category known as graduate non-degree (GND) to enable people who have a bachelor's degree to enroll in graduate courses without being officially admitted to a graduate program.

You can include a limited amount of credit earned in this category on your Plan of Study at the discretion of the advisory committee, the recommendation of the Assistant Dean for Graduate Studies, and the approval of the Graduate School.

You can include a maximum of 12 semester hours of GND graduate credit in your Plan of Study. In order to include a course, you must have earned at least a "B" grade.

Preparing and Filing the Master's Plan of Study (GS Form 6)

Before you complete 15 credit hours toward the MST, contact your advisor for assistance in preparing a draft of the Master's Plan of Study, GS Form 6. A Word version of this form is available at the graduate programs website [Forms for Students](#).

If you were admitted with conditions, you must have met them or be in the process of meeting them at the time you submit the Plan of Study.

If you have not met all of the conditions, the head of the graduate program or the department chair must create a written statement explaining why the condition/s have not been met and/or the resolution to the conditions, if relevant.

To file the Plan of Study for approval, follow these steps.

1. Review the portions of this Handbook to determine the requirements for the option (concentration, focus area, and/or certificate as well as direct project option or course-only option) you wish to pursue. Select courses that meet the degree requirements, and are appropriate for your area and interest. If possible, check that the courses you need will be offered at a time when you wish to take them.
2. Prepare a draft of your Plan of Study (sample included in Appendix B).
 - a. Indicate courses in your primary area with a “P” in the left-most column labeled “Area.” List primary area courses together as a group.
 - b. Indicate related area courses with an “R” in the “Area” column. List related area courses together as a group.
3. Select a faculty member as your major professor and the chair of your advisory committee. Confer with him/her for advice on the Plan of Study and his/her informal agreement to the plan when it is submitted in final format.
4. In consultation with your major professor, select two additional faculty members to serve on your graduate advisory committee. To find qualified faculty members, see Appendix C.
5. Activate your Purdue Career Account if you have not already done so. Instructions for doing so are contained in an e-mail you received several months after admission.
6. Prepare and submit an on-line Plan of Study following the instructions at <http://graduate.iupui.edu/doc/forms/plan-of-study-purdue.pdf>

The on-line system will route your plan to your committee members and the graduate office for approval.

After the Plan of Study is officially approved, if you wish to make changes, complete a “Change to the Plan of Study” GS Form 13 found at

<http://enr.iupui.edu/sites/graduateprograms/current-students/forms.php>.

Registering for your Final Semester

You must register for Candidacy in the final semester in addition to enrolling in the remaining course work on your Plan of Study.

In the final semester:

- Enroll in at least one credit of fee-bearing coursework, i.e. a regular course(s) or a directed project, and
- Register for CAND 99100 Candidate to declare your status as a “candidate for degree”. CAND 99100 has no credit and zero cost.

If graduation is cancelled or postponed, in subsequent semester/s you will again:

- Enroll in at least 1 credit of fee-bearing coursework, i.e. a regular course(s) or a directed project, and
- Register for CAND 99100 to declare your status as a “candidate for a degree”.

7. Overall Master's Degree Procedural Checklist

This checklist will help you map a path through the MST. This checklist provides a general picture of the process, but there may be individual exceptions.

Specific and official deadlines are announced each semester, will be emailed to all MST graduate students, and are available from the School of Engineering and Technology Graduate Programs Office [graduation information](#) website.

Prior to the First Semester

1. Be aware of *admission condition/s for continued enrollment*, if any, which must be satisfied.
2. Study the graduate handbook carefully. With the help of your major professor, discuss your career and educational objectives and draft a preliminary Plan of Study.
3. Register for classes. See the enrollment packet that you received after admission for instructions on how to register. In addition, complete the steps needed for obtaining an ID card and a parking permit, if needed. Instructions for doing so are also included in the packet.

Succeeding Semesters

1. Select a Master's committee consisting of your major professor and at least two graduate faculty members.
2. Discuss the preliminary Plan of Study with each of the members of the advisory committee.
3. Using the Plan of Study (GS Form 6, <http://engr.iupui.edu/sites/graduateprograms/current-students/index.php>), submit a draft Plan of Study to your committee members.
4. Refine the Plan of Study, if needed, based on the committee's suggestions.
5. If you have admission condition/s ensure that you have met the condition/s.
6. Activate your Purdue Career Account, following the instructions you received via e-mail several months after admission.
7. Submit your final Plan of Study using the instructions at <http://graduate.iupui.edu/doc/forms/plan-of-study-purdue.pdf>
8. Identify a tentative directed project if you are pursuing this option.
9. Register for classes for the next semester. This option is usually available about halfway through a semester.
10. Apply for graduation. Watch for the deadline; it comes a couple of semesters before graduation.

Final Semester

1. Register for the remaining course/s on your Plan of Study.
2. Register for *Candidacy (CAND) 99100* to declare your status as a “candidate for degree” plus a minimum of 1 credit hour of a fee-bearing course. CAND 99100 is a “no credit, no cost” registration. (CAND 99200 and 99300 may only be used in exceptional cases with approval of the IUPUI Graduate Office.)
3. Insure that any changes in your Plan of Study have been approved.
4. Present your Directed Project, if you have chosen that option.

8. Department of Computer Information and Graphics Technology programs

Concentrations

A concentration is a specialized area of graduate study with a defined plan of study and admissions requirements. The concentration is listed on a student's final transcript. The Department of Computer Information and Graphics Technology offers a concentration in Information Assurance and Security (InfoSec).

Information Assurance and Security (InfoSec) Concentration (Purdue Code: XIAS)

The M.S. Degree in Technology, Information Assurance and Security (InfoSec) Concentration, provides both technical and innovative knowledge to help students fully leverage InfoSec advancements thus allowing external organization to move from a reactive to a proactive InfoSec approach. The program's applied approach to learning and research, coupled with its flexible curriculum, allows students to focus on InfoSec technological topics that are most important to them. The concentration can be completed in 2 calendar years by following the plan of study listed in Table 2, but may be taken at a pace meeting a student's needs.

Table 2. InfoSec Plan of Study

Course Area	Courses
Core Courses for MSTECH (3 courses; 9 credits)	TECH 50700 Measurement and Evaluation in Industry and Technology OLS 57100 Advanced Project Management
Core Courses for InfoSec Concentration (5 courses; 15 credits)	CIT 52800 Information Security Risk Assessment CIT 51600 Database Security CIT 53200 Wireless Security & Technology CIT 55510 Network Security CIT 56200 Mobile and Network Forensics
Electives (3 courses; 9 credits)	TECH 58100 Directed Project CIT 55000 Organizational Impact of IT CIT 52600 Applied Data Analytics CIT 54600 Mobile Computing and Application Technologies CIT 57800 Advanced Data Management TECH 58100 Adv. Topics in Database TECH 58100 Entrepreneurship in Info Tech TECH 58100 Management of IT Resources TECH 58100 Technology From a Global Perspective ECE 62700 Introduction to Cryptography and Secure Communication CSCI 55500 Cryptography Or other graduate courses approved by academic advisors

Admission Requirements – Information Assurance and Security:

- Have completed or will be completing a bachelor’s degree from an accredited university.
- Coursework or knowledge of trigonometry and statistics.
- Obtained an undergraduate cumulative GPA of 3.0 or higher on a 4.0 scale.
- Have taken the GRE or the GMAT general test.
- International students who are graduates of non-US institutions and whose first language is not English are required to take the Test of English as a Foreign Language (TOEFL). A minimum score of 550 on the paper version or 79 on the computer version is required.

Focus Areas

Focus areas require coursework related to a specific discipline or topic in addition to the M.S. Technology core courses. Focus areas are not listed on the student’s final transcript but provide a student with a defined plan of study. The Department of Computer Information and Graphics Technology offers a focus area in Applied Data Management and Analytics.

Applied Data Management and Analytics

The M.S. Degree in Technology, Applied Data Management and Analytics focus area, provides both technical and innovative knowledge to help the students fully leverage data science advancements, allowing external organization to move from a reactive to a proactive data analytics approach.

Table 3. Applied Data Management & Analytics Plan of Study

Course Area	Courses
Core Courses for MSTECH (3 courses; 9 credits)	TECH 50700 Measurement and Evaluation in Industry and Technology OLS 57100 Advanced Project Management
Core Courses for Data Focus Area (3 courses; 9 credits)	CIT 52600 Applied Data Analytics CIT 51600 Database Security CIT 57800 Advanced Data Management
Electives (5 courses; 15 credits)	TECH 58100 Directed Project CIT 55000 Organizational Impact of IT TECH 58100 Management of IT Resources TECH 58100 Technology From a Global Perspective TECH 58100 Entrepreneurship in Info Tech Or other graduate courses approved by academic advisors

Computer Graphics Technology Focus Area

The Computer Graphics Technology (CGT) program is designed for students who are creative and technological problem solvers. CGT is a unique program that prepares students for a wide variety of computer graphics professions. It educates graduate students to become the finest practitioners, managers, and leaders in the field of applied computer graphics technology and digital communication. So whether you dream of designing robust websites, animating 3D characters or anything in between, the fun begins with Computer Graphics Technology

Student pursuing the focus area may choose from a course only option or an option requiring a directed project in an area related to the computer graphics technology. Both options require 33 credit hours.

Additional information related to the concentration and foci areas offered by the Department of Computer Information and Graphics Technology is available from:

Department of Computer Information and Graphics Technology

Office of Graduate Programs

Purdue School of Engineering and Technology

799 West Michigan Street, ET 301

Indianapolis, IN 46202-5160

Telephone: 317.274.2534

Email: skwalter@iupui.edu

Computer and Information Technology Focus Area

This program will be applicable for students seeking graduate work related to applied information technology. It will transform the way the world lives, works, and plays by building, managing, and securing web-based services and applications. With the Computer and Information Technology program at IUPUI, you'll learn networking, security, data management, systems analysis and design, and programming—the information and technologies changing life as we know it.

Student pursuing the focus area may choose from a course only option or an option requiring a directed project in an area related to the computer and information technology. Both options require 33 credit hours.

CIT Focus Area Plan of Study	Option 1 w/project	Option 2 classes only
M.S. Technology Core Courses (9-12 credits) TECH 50700 Measurement and Evaluation in Industry and Technology OLS 57100 Advanced Project Management TECH 58100 Directed Project	12 Credits √ √ √	9 Credits √ √
CIT Core Courses (12-15 credits or more) CIT 52800 Information Security Risk Assessment CIT 51600 Database Security CIT 53200 Wireless Security & Technology CIT 55510 Network Security CIT 56200 Mobile and Network Forensics CIT 55000 Organizational Impact of IT TECH 58100 Adv Topics in Database TECH 58100 Entrepreneurship in Info Tech TECH 58100 Management of IT Resources TECH 58100 Technology From a Global Perspective	≥ 12 credits	≥ 15 credits
Related Courses (remaining credits) Electives with approval of advisor		

9. Combined BS/MS Computer Information Technology

Admission Requirement

Students will be admitted to the CIT department under the guidelines that currently exist for admitting traditional BS students. The sequence of courses that they will take for the first three years will be identical to the courses taken by the traditional CIT BS majors. The students will be made aware of the option to pursue the combined-degree program during their first year, and counseled appropriately if they wish to pursue it. It must be emphasized that the program is not meant for every CIT student, but is for those who demonstrate the commitment and the academic ability to be successful in the program. Therefore, it is anticipated that only the highly motivated students would be counseled to enter the combined-degree program.

Degree Requirements

The proposed curriculum includes all the core undergraduate courses that are currently required for BSCIT majors and all the current graduate course requirements of the traditional MSTECH program with CIT concentration.

Students will be required to maintain a minimum GPA of 3.2 for the first 84 credit hours of coursework (normally the end of fifth semester) in the plan of study in order to be admitted to the program. This requirement is more stringent than the current admission requirements for the MS TECH program in CIT.

Students interested in applying for the combined-degree program should apply during their junior (3rd) year and be accepted into the program prior to the start of the 4th year.

The total credit hours required for this combined-degree program will be 144 hours for those students awarded BS/MS in CIT degree. For reference, the Bachelor of Science in Computer Information Technology (BSCIT) requires 120 hours, and the MS TECH in CIT requires 33 hours, for a total of 153 hours. The integrated program is constructed to exploit an overlap of 9 credit hours, thereby reducing the number of required hours to 144 hours respectively. The BS degree will be awarded after 4 years/120 credit hours and the MS TECH degree will be awarded after the 5th year/144 credit hours.

The final admission to the graduate program will not be made unless the student meets the minimum 3.2 GPA requirement and receives at least a B grade in each of the two graduate courses in his/her BS plan of study.

Administrative Structure

There will be two plans of study for students in this program:

(1) A BS plan of study that will be filed no later than one semester before completing the BS degree requirements (normally in seventh semester), and will include the 9 credit hours of graduate courses to be taken in place of the CIT electives, and (2) an MS plan of study that

will be completed after the completion of the BS plan of study (normally in ninth semester), and will include the three graduate courses (9 credit hours) taken.

The two plans of study to be maintained are attached to this document, where the three overlapping graduate courses (9 credit hours) are to be indicated in both BS and MS plans. Semester-by-semester distribution of the courses is also attached.

Students must formally request permission to pursue the combined-degree program by completing the Declaration of Intent to Pursue the Combined Degree (see attached) no later than February 15th of the spring term in their junior (3rd) year. Requests will be evaluated based upon the entrance requirements as outlined above by the Joint CIT Undergraduate and Graduate Education Committee. The preliminary acceptance notification will be sent to the qualified students before the beginning of their senior year. Upon preliminary acceptance to the combined-degree program, the student will enter a 1-year Transitional Admission period where he/she completes the requirements of the BS CIT degree, including the three overlapping graduate level courses and maintains the minimum academic performance requirements (cumulative BS CIT PoS GPA > 3.2, >3.0 for all graduate level courses) to be retained within the combined degree program. The student will be assigned a CIT graduate advisor to advise the student on requirements related to the MS Tech degree and retain his/her CIT undergraduate advisor until completion of the BS CIT degree. The student should form a three-member Academic Advisory Committee composed of Purdue Graduate Faculty members no later than the 2nd term following admission to the combined-degree program, if the student is in the project-based track for the MS program. The committee must be chaired by a regular CIT faculty member.

A minimum GPA of 3.00 will be required in the MS plan of study for graduation as in the traditional Master's program. Master's GPA will be calculated by including the grades of the three graduate courses transferred from the BS plan of study. Table 1 attached here further outlines the timeline and milestones of the program.

The program is designed such that a student in the program will be able to switch to the traditional BSCIT at any time to receive a BSCIT degree.

The graduate program will offer non-thesis project-based and courses-only options. Depending on the nature of the research, in some cases the project-based option may require an additional semester to finish. Project advising committees will consist of at least three members from CIT department.

The Graduate Committee will review each student's performance each semester after they are admitted to the combined-degree program.

Following the admission to the BSMS program, the student's performance will be assessed by the CIT Graduate Committee at the end of each semester to ensure that the student's performance is at the level expected for traditional MS TECH students in the CIT graduate concentrations and the grades in each Master's courses in the BS plan of study are B or higher.

Students will receive both degrees together, upon completion of the requisite credit hours. As alluded to previously, if a student decides to leave the program, he/she will still be eligible to receive a BSCIT degree. Also, if the student's performance is judged by the CIT Graduate Committee to be unsatisfactory for the combined-degree program in that the minimum grade requirements (minimum 3.00 GPA and minimum B grade in any of the first three graduate courses taken) are not met, the student will still be able to receive a BS in CIT upon completion of all the requirements for that degree.

This degree program will be offered only on the IUPUI campus.

**Semester-by-Semester Distribution of Courses in the Five-Year Combined BSCIT/MSTECH
Program in CIT**

(Jointly Developed by the CIT Undergraduate and Graduate Committees)

Year 1

First Semester	SCH	Second Semester	SCH
CIT 11200 Info Tech Fundamentals	3	CIT 12000 Quantitative Analysis I	3
CIT 21200 Web Site Design	3	CIT 14000 Prog Constructs Laboratory	3
ENG-W 131 Reading, Writing, and Inquiry	3	CIT 17600 Information Tech Architecture	3
MATH 15900 Precalculus	5	COMM-R 110 Fund of Speech Communications	3
		Cultural Understanding	3
TOTAL SCH	14	TOTAL SCH	15

Year 2

First Semester	SCH	Second Semester	SCH
CIT 20700 Data Communications	3	CIT Concentration 1	3
CIT 21300 Systems Analysis & Design	3	CIT 20200 Network Fundamentals	3
CIT 21400 Intro to Data Management	3	CIT 20300 Info Security Fundamentals	3
20000 Prog CIT 21500 or 24200 or 27000	3	CIT 22000 Quantitative Analysis II	3
OLS 25200 Human Behavior in Organizations	3	TCM 25000 Career Planning	1
		Science - Select from Common Core	3
TOTAL SCH	15	TOTAL SCH	16

Year 3

First Semester	SCH	Second Semester	SCH
CIT Concentration 2	3	CIT Concentration 3	3
CIT 37300 Visual Design for Software	3	CIT Concentration 4	3
OLS 57100 Project Management	3	TCM Select any 300/400 level TCM course	3
OLS 26300 Ethical Decisions in Leadership	3	CIT Select Any CIT Course	3
Science - Select from Common Core	3	Hum/Soc Sci, Arts/Humanities, or Social Science	3
TOTAL SCH	15	TOTAL SCH	15

Year 4

First Semester	SCH	Second Semester	SCH
CIT Concentration 5	3	CIT Concentration 7	3
CIT Concentration 6	3	CIT Concentration 8	3
TECH 50700 Measurement and Evaluation in Industry and	3	IT Experience	3
CIT Elective TECH/CIT 5XXXX	3	CIT Elective Any College Course	3
CIT Elective Any College Course	3	CIT Elective Any College Course	3
TOTAL SCH	15	TOTAL SCH	15

Year 5

First Semester	SCH	Second Semester	SCH
TECH/CIT 5XXXX Elective	3	TECH/CIT 5XXXX Core Course	3
TECH/CIT 5XXXX Elective	3	CIT 5XXXX Concentration Core Course	3
CIT 5XX Concentration Core Course	3	CIT 5XXXX/6XXXX Elective	3
CIT 5XX Concentration Core Course	3	TECH 58100 Directed Project (Project Option) or CIT 5XX/6XX	3
TOTAL SCH	12	TOTAL SCH	12

TOTAL SCH = 144

NOTES (1) = From Approved Humanities or Social Science Elective List

(2) = From Approved Science Elective List

(3) = From Approved Technical Elective List

(4) = From Approved Electrical Engineering Elective List

(5) = From Lists 1-4

Appendix A: Directed Project

To pursue the Directed Project, you must first develop a proposal and secure its approval by your advisory committee.

The directed project is an applied research project that is more extensive and sophisticated than a graduate-level independent study and less formal than a master's thesis. The overall objective of the requirement is to engage each graduate student in a study, typically with an industry, business, or education focus, which is sufficiently involved as to require more than one semester to conceive, conduct, and report. The focus is on a topic with practical implications rather than original research.

Directed Project Characteristics

- Written for business, industry, or other organizations
- Results in a tangible product of value to business and industry, or education for business and industry
- Usually involves a technical problem solving activity
- Is documented to permit replication
- Usually involves some form of validation
- Generally requires application of a synthesis of coursework
- Able to be published (recommended but not required)

Directed Project Objectives

By successfully completing a Directed Project, you demonstrate your ability to:

- Identify a business or industry relevant solution to a technology related problem
- Define and/or validate a business or industry relevant problem
- Address a technological problem in a systematic and replicable manner
- Use technical/professional research and/or development procedures effectively
- Identify criteria for success/solution of the problem
- Gather information appropriate to the problem by employing business research procedures
- Document the research and development activity in a manner that permits replication and assessment of key decisions and alternatives
- Write effectively in a form customary to business and industry, typically using APA format
- Prepare and deliver a presentation in a form customary to business and industry

Effective Directed Project Practices

- A directed project requires you to select and employ effective research & development procedures to address the problem.
- A directed project generates a new solution, product, or procedure. It may involve “proof of concept,” and it must be of direct value to business or industry or to education for business or industry.
- A possible component (although not a requirement) of the directed project might be an Implementation Plan (i.e., recommendations for deploying the developed solution). This plan should include the suggested near and midterm steps.
- We encourage the involvement of industry partners for validation or other relevant activities.
- Teams of students working on larger projects are permissible as long as each has a unique and significant contribution and that there is a high degree of independence so that one student’s success is not predicated on another’s.
- The written documents should employ either a) business or industry style manuals such as the *Chicago Manual of Style*, b) other relevant business/industry writing style manual, or c) the APA manual when required by the advisor.

Preparing Directed Project Proposals

Every individual and every proposed project is unique. The exact approach that you take is ultimately at the discretion of the major professor (advisor) and your graduate committee.

At the start of your second-to-the-last semester, begin thinking about your directed project topic in consultation with your advisor. Think of it in terms of a workplace problem or need that should be addressed.

Whether a proposal is prepared for a graduate advisory committee or for an employer, proposals must be succinct and direct. Clear, jargon-free prose that establishes the need for the study and a proposed method of solution are required. While School of Engineering Technology faculty have not established specific proposal length requirements, a proposal should be sufficiently detailed to enable the graduate committee to render effective judgment and share appropriate advice on how to proceed.

In addition to content, pay attention to format and style. Most publication manuals include both style and format guidelines.

Format is the physical layout of a paper. Rules for indentation, type face, line length, etc., are considered format issues.

Style requirements are created to facilitate clear communication. Writing style involves the selection of words and the organization of those words in a sentence. Style includes formality, person, complexity of language, abbreviation standards etc.

Mechanics of writing include spelling, punctuation, and grammar usage that conforms to professional conventions.

Write the proposal in future tense. Thus, state procedures as, "This proposed study will collect data using . . ." or "Results of this study will be used to"

School of Engineering and Technology standards recommend that the proposal be written in third person. It is seldom necessary to refer to oneself in a formal paper. Use a writing style that does not include either personal identification with a personal pronoun (I, we) or a given name (Jane Doe). If such a strategy is not possible, use an appropriate third person term such as "this developer" or "this researcher". This practice should be used only as a last resort, as it is considered ambiguous in many cases.

Directed Project Proposal Contents

Cover Page

The cover page must follow the format used by the template in Appendix B. This format includes spaces for each advisor to sign and date the proposal. Committee member information should be entered using the first name, middle initial, and last name. Do not use academic or degree titles such as Professor, Dr., etc., before the name. List the major professor (committee chairperson) first and then each related area advisor. The committee member's relationship to the Plan of Study is listed below his/her name. Thus, if the primary area on the Plan of Study is listed as "Technology", the committee chairperson (major professor) would be listed as follows.

Susan P. Jones, Chair

Technology

If the Plan of Study includes two related areas titled "Communications" and "Applied Computing," the committee members would be listed as follows.

Alexander G. Bell

Communications

A. Paul McIntosh

Applied Computing

Abstract (1 page maximum)

Prepare an abstract that succinctly describes the proposed problem addressed, purpose for the study, significance of the proposed study, and an overview of the proposed methods and the anticipated deliverables.

Introduction (1-3 pages)

The introduction establishes a frame of reference in the reader's mind. Appropriate introductions are brief and designed to establish the context and need for a study.

Choose one of several possible ways to construct an introduction that will accomplish its intended goal.

One common method is to identify the problem in global terms. This approach creates an overall frame of reference that makes it much easier for the reader to focus on the more detailed portions of the proposal.

Another method is to identify a plausible alternative to established methods of addressing the problem at hand. For example, sometimes when employing conventional methods, an unexpected outcome (anomaly) occurs. Given this, the proposal could be focused on ascertaining if the outcome was due to chance or whether other factors exist that would make the unexpected a more likely future occurrence. Given the pace of development, often wholly new techniques or procedures may offer an alternative to current methodologies. The beginnings of these new approaches are placed in the introduction to set the stage for the proposed project.

Problem Statement

A problem is something that needs to be solved. Therefore, the statement of the problem is merely a brief description of what is wrong, written in specific enough terms that the reader can see the problem. In this section, you may want to analyze the problem, covering topics such as the history of the problem, the causes and effects, etc.

In the problem statement, do not restate the introduction, do not describe the methods to be used, and do not propose a suggested solution.

Significance

After stating the problem, establish its significance, showing the importance of the proposed study. Tie the problem to your overall Plan of Study and career goals, as appropriate. Generally, this section should "sell" the project as being worthy of doing in the business/industry and/or academic/disciplinary context. One of the effective methods of strengthening this section is to highlight key citations from credible sources that indicate that the problem is real and that things would be better if it were solved. In addition, you may discuss the effects on the business if the problem is not solved.

Literature Review

The review of literature serves several important functions.

First, it is a method to indicate that the problem is more universal than the specific proposal.

Second, it serves as a justification for the proposed study in that others have addressed related problems.

Third, it positions the work in the field giving context to what has and has not been done and where this project/thesis is positioned therein.

Fourth, it identifies possible methods for the conduct of the study by identifying possible data collection strategies, statistical procedures, or sources of other procedural information.

Finally, the review of literature should document justification for the proposed study.

There are three principle justifications for additional investigation of a problem. One justification is that there are plausible alternative hypotheses to conclusions reported in existing studies. That is, there may be another possible variable that is influencing the results of existing studies. The second reason for proposing a new study is to determine if the reported study can be duplicated (replicated) in a new environment. A third reason for conducting a study accounts for the introduction of new data or procedures that have become available. In this case, the review of literature serves to demonstrate that no examples of the use of new techniques could be found.

Typically, literature review sections include some appropriate description of the following:

- A description of the methodology and terms employed to conduct the review of the literature itself
- A description of the literature pertinent to choices of data collection and analysis
- A thematically organized summary of the review of the literature

For the purposes of a proposal, the review of literature should focus on the key studies. These cannot be determined without extensive review of the literature prior to the preparation of the proposal. The review must be sufficiently extensive to insure that all sides of an issue have been researched and that a balanced evaluation of the problem area has been accomplished. Because a proposal is limited by space constraints, only the most germane studies should be included.

Purpose

Once the problem and its significance have been stated, the specific purpose of the project must be described. Indicate what you propose to do about the problem, i.e., what part of it you wish to address and what the deliverables of your work will be. You can state the purpose in one of three ways, as shown in the following examples:

1. Research Purpose: The purpose of this study is to determine to what extent the duration and frequency of physical therapy influence health care costs following traumatic injury.
2. Research Question: Does the duration and frequency of physical therapy influence health care costs following traumatic injury?
3. Research Hypothesis: The health care costs of patients who participate in physical therapy over an 8-week period following traumatic injury are significantly less than the costs of patients provided only 4 weeks of therapy.

Definitions

Include definitions whenever it is necessary to inform the reader of the unique way in which the terms are to be used in the proposed project. For example, if learning is to be defined as "a change in behavior," both the entering and terminal behaviors must be defined. However, when terms are used in standard ways, it is not necessary to include the definitions. Be sure to spell out all acronyms.

Assumptions

Every study requires some assumptions; they will vary with the type of problem. For example, one assumption could be that all members of the group being studied know Windows-based operating systems. Another assumption may be that employees will be willing to participate in the training exercise being proposed. Assumptions, of course, must be established as part of the proposal writing stage and they must be approved by the major professor and committee.

Scope or Delimitations

This section describes the scope or delimitations of a project, i.e., statements about things that you will NOT address. There are always constraining factors in a study. This is particularly true of directed projects in which time, money, and other resources are limited to those that the individual student can bring to the study.

A delimitation is a factor that will narrow the scope of the study being proposed. This is a factor that is known about before the study is performed. For example, one delimitation may be that time does not allow a follow-up after the initial treatment or evaluation. Will the study be limited to a single facility of Corporation X, or will it be conducted at multiple sites? Clearly, a multiple-site study is more generalizable than a study at a single location. The signed proposal is the contract for the study. If the proposal were ambiguous about its limits, you could be in the position of having to gather further information.

Note that delimitations are distinctly different from limitations. A limitation is a weakness or restriction on inference. An example would be a survey having a response rate low enough to produce unreliable and invalid information.

Methodology (or Procedures)

All procedures to be used in the proposed study should be defined. For empirical studies, define the population, sampling frame, and sampling method. Whenever possible, justify the proposed procedure by reference to other published studies that recommend the steps defined. This will insure that the advisory committee understands the steps you wish to take and will establish those steps as appropriate in other published studies.

Time Action Plan

A time action plan establishes the period in which the conduct of the proposed study will occur. This section is vital when there are strict time constraints on data collection or other factors affecting the conduct of the study. This plan also helps communicate your proposed time allocation for each major component of the project.

Limitations

Limitations are descriptions of weaknesses of a study. If you know about these limitations at the time of generating the proposal, reveal them explicitly in advance. Often, however, in addition to any weaknesses known in advance of conducting a project, some invariably arise during the course of project execution. These new limitations will be added to the limitations section of the final project report, and they must be taken into account when discussing the project conclusions.

References

The reference list should include only the publications cited in the body of the proposal. All reference citations within the body of the proposal and the reference list must comply with the standards of the most recent edition of the Publication Manual of the American Psychological Association.

Note on Use of Acronyms

If you use acronyms to reduce volume/repetition in a proposal, use the full term the first time followed by the acronym in parentheses. Thereafter, the acronym may be used in lieu of the full term.

The paragraph below demonstrates the inappropriate and excessive use of acronyms because readers do not know the meaning of the acronyms.

What would happen if the president of the BBB requested the assistance of the FTC in order to convince the DOC that it should investigate the effect of WSJ interference with NAFTA signatories regarding concerns about the impact of UL standards on GATT? I hope that the need will never arise.

Preparing the Final Directed Project Report

The directed project final report uses the project proposal as its foundation. During the proposal development process, you created a procedure to follow to conduct the project. The final report now modifies the Methodology section to describe what exactly what you did and adds new sections to discuss what the findings and conclusions are. Note and justify any deviations from the proposal.

The tense found in the proposal draft is changed from future (what is planned) to past (what was done) when converting the proposal document into the final report.

The final report will typically retain all of the sections of the project proposal except the Time Action Plan. The following sections are added to the original proposal items.

Results (or Findings)

In this section, report and discuss the results of the project. When reporting findings, simply report factual information, including test scores, changes observed in lab performance, etc. Even if your results are not what you expected, you may still have important information to report. Later, in the Discussion you will interpret or explain the significance of the findings.

Conclusion, Discussion, and Recommendations

Based on the findings, draw conclusions, interpreted and considered within the context established by the study's delimitations and limitations. Additionally, link conclusions to key points or questions from the literature review. The conclusions form the basis for the final evaluation of the project. After drawing conclusions and determining the effect of the study, you may make final recommendations for further work and or research.

For example, assume that a new laboratory activity is developed. This activity was implemented in one laboratory section. During post-testing, the laboratory scores were higher in the section that utilized the activity. However, the activity required twice as much laboratory time, compared to the normal activities. It might be concluded that the instruction was effective, as evidenced by the test scores. A recommendation might be that the instruction should take less time. A second recommendation might be to track students who received this instruction and note if improvement in related areas was found, compared to students who did not receive the special instruction.

Appendices

Include appendices as needed. Title each appendix item. Remember to refer to each appendix somewhere in the body of the final report.

Final Oral Examination Procedures

Appointment of the Examining Committee & scheduling the final oral examination

The examining committee will usually be identical to your advisory committee. The major professor and you are jointly responsible for finding a common date, time, and period when all advisory committee members can meet for the examination, within the deadlines established by the Graduate School. The major professor is expected to take initiative in assisting you with this procedure.

No later than three weeks prior to the examination date, the major professor will communicate the date, time, period, facilities, and equipment needs for the meeting are to be transmitted to the School of Engineering and Technology Graduate Programs Office who will confirm its receipt.

If the examining committee is to be different from the advisory committee, a replacement member must be appointed and a Request for Appointment of Examining Committee form completed and submitted to the Graduate Programs Office no less than three weeks prior to the examination date.

Following the notice of final examination date, the department will schedule an appropriate meeting room (equipment other than standard equipment offered is the responsibility of the student to arrange) and prepare the necessary forms.

The school graduate office will distribute copies of approved forms to the student and all advisory committee members.

The day prior to the final examination date, the department will forward a file of relevant student records, including "Report of the Examining Committee" form GS-7 to the major professor.

It is the major professor's responsibility to obtain all required committee member signatures and return the signed form to the school graduate office in advance of the established deadlines.

Completing the Directed Project Requirement

At the conclusion of the final oral examination, the major professor and each member of the examining committee will sign the Report of the Examining Committee form GS-7; the major professor will forward the form to the appropriate office for processing.

If the examining committee indicates any problems or deficiencies in the report, these items must be corrected before the project or report will be approved by each committee member.

In order to graduate during any semester, complete all required edits/corrections and submit them for approval before the established deadlines.

Finally, submit a copy of the approved final project report to the Graduate Office, major professor, and each member of the examining committee requesting a copy.

Checklist of Steps in Completing a Directed Project

1. Explore a topic/problem/issue with your major professor as part of your Plan of Study development.
2. Prepare a brief preliminary proposal describing the problem, rationale, related literature, and procedures.

3. Discuss the preliminary proposal with the major professor.
4. Expand and refine the proposal, if needed, based on the major professor's suggestions.
5. Circulate the tentative proposal for advisory committee comments and revisions.
6. Secure approval signatures from all members of the advisory committee on the cover page of the final version of the proposal.
7. Distribute a copy of the approved proposal to each advisory committee member and file the original in your department's Graduate Programs Office.
8. Carry out the proposed investigation.
9. Prepare an appropriate report following the format described, including, but not limited to, a description of the problem, rationale, related literature, procedures, results and/or recommendations, and a discussion of the results/recommendations.
10. Three weeks or more before the exam date, confer with all members of the advisory committee to establish a date and time for the final oral examination. A conference room will be arranged and confirmation sent to all committee members.
11. Meet with the major professor to edit the report into a final draft.
12. Only after receiving permission from your major professor, deliver a copy of the final report to each examining committee member at least two weeks prior to the final oral examination.
13. Defend the investigation to the examining committee and other interested faculty and students during the final oral examination.
14. Correct any identified deficiencies.
15. Secure approval signatures from each member of the examining committee on the completed report.
16. Submit the original signed final project report to the School of Engineering and Technology Office of Graduate Studies, a copy to the major professor, and a copy to each examining committee member requesting a copy.

Appendix B: Forms and Templates

Sample forms - Most of the forms are on the Purdue Database and paper-based form is not acceptable.

- Purdue Plan of Study Form GS-6
- Purdue Plan of Study Change Form GS-13
- Purdue Report of Master's Examining Committee GS-7
- Directed Project Proposal Cover Sheet
- Directed Project Final Report Cover Sheet

Purdue Plan of Study Change Form GS-13

Graduate School Form 13
(Revised 6/06)

PURDUE UNIVERSITY GRADUATE SCHOOL Request for Change to the Plan of Study

(Please type)

Department _____ Department Code _____ Date _____

Name of Student _____ PUID No. _____
Last First Middle

CHANGE OPTION TO: _____ Nonthesis _____ Thesis

COURSE CHANGES

	Course No. & Abbr.	Credit Hours	Official Course Title
Delete			
Add			
Delete			
Add			
Delete			
Add			
Delete			
Add			

COMMITTEE CHANGES

	Advisory Committee Members	Department	Graduate Faculty Identifier
Delete			
Add			
Delete			
Add			
Delete			
Add			

Reason(s) for the above request:

- 1. The deleted course (_____) has been removed from the course offerings.
- 2. The course (_____) was not available in the most recent academic session.
- 3. Equivalent material will be covered in the substituted course (_____).
- 4. Conflicting course schedules (_____ and _____) have prevented registration.
- 5. Course title has been changed (_____).
- 6. Program emphasis has changed (explain). _____
- 7. Reasons for committee change. _____
- 8. Other: _____

SIGNATURES:

Student

Committee Member(s) Added

Major Professor

Committee Member(s) Deleted

Head of the Graduate Program

Academic Dean

Graduate School Dean

CHECK IF ADDITIONAL INFORMATION IS PROVIDED ON THE REVERSE SIDE OF THIS FORM.

Submit original plus one copy to the Graduate School.

Purdue Report of Master's Examining Committee GS-7

Graduate School Form 7
(Revised 11/07)

PURDUE UNIVERSITY GRADUATE SCHOOL Report of Master's Examining Committee

Name of Candidate _____ PUID No _____
Department _____ Department Code _____
Date Examination Held _____

Degree Sought:

- Master of Arts
 Master of Science
 Master of _____

Basis of Recommendation:

- Oral examination of the candidate
 Written examination
 Conference of the committee in the absence of the candidate

Degree Recommendation:

- Recommend that the candidate be certified to the faculty for the above degree*
 Do NOT recommend that the candidate be certified to the faculty for the above degree

Thesis Award (if applicable):

- Do consider nominating this student for an outstanding thesis award
 Do NOT consider nominating this student for an outstanding thesis award

Examination

Approve	Disapprove	Examining Committee:	Graduate Faculty Identifier
<input type="checkbox"/>	<input type="checkbox"/>	_____, Chair	_____
<input type="checkbox"/>	<input type="checkbox"/>	_____	_____
<input type="checkbox"/>	<input type="checkbox"/>	_____	_____
<input type="checkbox"/>	<input type="checkbox"/>	_____	_____
<input type="checkbox"/>	<input type="checkbox"/>	_____	_____

Recorded by: _____
Head of the Graduate Program _____ Date _____

This report should be forwarded to the Graduate School as soon as the examination is completed.

*Committee certification for a master's degree requires that all members of a three-person committee concur that the student has satisfactorily completed the examination. If the committee has four or more members, a single member may withhold his or her signature of approval.

Directed Project Proposal Cover Sheet



**SCHOOL OF ENGINEERING
AND TECHNOLOGY**

INDIANA UNIVERSITY-PURDUE UNIVERSITY
Indianapolis

TITLE

A Directed Project Proposal

Submitted to the Faculty

of

Purdue School of Engineering and Technology
Indianapolis

by

Your Name

In partial fulfillment of the requirements for the

Degree of Master of Science in Technology

Committee Member

Approval Signature

Date

Professor Name, Chair

Related Area

Professor Name

Related Area

Professor Name

Related Area

Directed Project Final Report Cover Sheet



**SCHOOL OF ENGINEERING
AND TECHNOLOGY**

INDIANA UNIVERSITY-PURDUE UNIVERSITY
Indianapolis

TITLE

A Directed Project Final Report

Submitted to the Faculty

of

Purdue School of Engineering and Technology
Indianapolis

by

Your Name

In partial fulfillment of the requirements for the

Degree of Master of Science in Technology

Committee Member

Approval Signature

Date

Professor Name, Chair

Related Area

Professor Name

Related Area

Professor Name

Related Area

Appendix C: IUPUI Technology Graduate Faculty and Identifiers

As you complete your plan of study and choose your Advisory Committee, you will select from among Purdue Graduate Faculty members and include their identifying numbers on the Plan of Study form.

To access the current list of graduate faculty and their identifiers:

1. Go to the Graduate School database:
https://ias.itap.purdue.edu/rgs/wpu_intra.pu_dispauth
2. Type in your Purdue Career account login.
3. Click on “Graduate Faculty Appointment Information” tab in the top menu bar.
4. Click on “View Other Depts” tab.
5. Select from the drop-down menu: Campus: Indianapolis (IUPUI).
6. Select: Department: (TECH) TECHNOLOGY.

You will find the Faculty Identifier number in the second column.

The Chair of your Thesis or Directed Project committee should be associated with your area of specialization and must have a Regular (R.1, R.2, R.3, R.3A, R.5, R.5A, R.6) or Special 1 (S.1) appointment from the Purdue Graduate School.

You can find this information in the column with the word “Level” at the top.

CIGT Graduate Faculty Identifiers

Faculty Name	Faculty Identifier
Xiaonan Guo	X0881
Ali Jafari	X0492
Connie Justice	X0461
Feng Li	X0608
Hongbo Liu	X0741
Xiao Luo	X0821
Renran Tian	X0818
Zhengming (Allan) Ding	X0883
April Savoy	X0885