THE COLLEGE OF TECHNOLOGY

M.S. GRADUATE STUDENT HANDBOOK

Assembled by
the Graduate Faculty
in the
College of Technology

PURDUE
UNIVERSITY

West Lafayette, IN

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College of Technology M.S. Graduate Student Handbook

NOTE: *This document supersedes the Graduate School Policies & Procedures Guide. Throughout this Graduate Handbook* ***XXX*** *refers to the departmental prefix code (e.g.,* ***OLS*** *598,* ***MET*** *590).*

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FORWARD

This document is intended to clarify and emphasize the expectations that the CoT has relative to the pursuit of graduate studies. If you have questions about how to interpret what is in this Handbook, please consult with your major professor, the CoT Graduate Program Chair, or the CoT Graduate Coordinator.

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SECTION 1.0. INTRODUCTION

Section 1.0 of this document provides an overview to general information graduate study in the College of Technology.

1.1. General Information

The College of Technology (CoT) offers graduate instruction leading to the Master of Science (M.S.) and the Doctor of Philosophy (Ph.D.) degrees. The master's degree enables students to concentrate on professional development studies in technology or technology education in any of the disciplinary foci and/or areas of concentration (see table 1) offered by the college. Note that some areas of concentration may include more than one area of disciplinary focus. Both thesis and non-thesis routes are offered through the master's program. The Ph.D. program's primary focus is to prepare faculty, researchers, specialists and administrators for leadership in technological and engineering careers in academia and industry.

Table 1.1. *Disciplinary Foci and Areas of Concentration*

Disciplinary Foci	Areas of Concentration
• Aviation Technology • Building Construction Management Technology • Computer Graphics Technology • Computer Integrated Manufacturing Technology • Computer Technology • Electrical & Computer Engineering Technology • Industrial Technology • Mechanical Engineering Technology • Organizational Leadership and Supervision	• Advanced Manufacturing—M.S. • Applied Computer Graphics—M.S. • Aviation and Aerospace Management—M.S. • Aviation Human Performance—M.S. • Building Construction Management—M.S. • Computational Science—M.S. & Ph.D. • Cyber Forensics—M.S. thesis only • Information Security—M.S. • Information Technology—M.S. • Industrial Technology—M.S. • Organizational Leadership—M.S. • Perceptual and Scientific Visualization—M.S. • Product Innovation and Development—M.S. • Sustainable Energy Systems—M.S.

Specific information about the College of Technology graduate program may be obtained from the web page at http://www.tech.purdue.edu/Graduate/index.cfm. Written inquiries may be directed to Associate Dean for Graduate Studies, College of Technology, Rm. 150 Knoy Hall, Purdue University, 401 N. Grant, West Lafayette, IN 47907-2021, phone 765-494-6875.

This document mainly addresses the Master of Science – On-campus program and general graduate procedures. **A separate document, CoT Ph.D. Handbook, is available from the College of Technology Graduate Studies Office to describe the College's Ph.D. program and procedures. Specific departments having their own M.S. degrees may have additional requirements or their own departmental handbooks.**

1.2. Master of Science – On-Campus Program

The Master of Science degree program is offered to graduate students admitted to the College of Technology. Applicants are required to have earned a baccalaureate (or equivalent) degree. The master's program requires a minimum of 33 credit hours and typically is completed in four (4) semesters. The program requires a primary Technology area with a minimum of 15 credit hours of courses with TECH (or departmental prefixes) and a minimum of one related area of at least six (6) credit hours. The master's degree is offered in both directed project and thesis versions. The directed project version requires a minimum of 30 hours of coursework plus three (3) credit hours of XXX 598 dedicated to the directed project. The thesis master's requires a total of 27 hours of coursework plus six (6) credit hours of XXX 698 Thesis Research.

> ***NOTE:*** *Several departments in the College of Technology have their own M.S. degrees. As of summer 2011, Aviation Technology (AT), Computer and Information Technology (C&IT), Computer Graphics Technology (CGT) and Industrial Technology (IT) each have their own M.S. degrees. If you are interested in those specific degrees, check their departmental graduate studies web site for information or additional requirements.*

1.3. Master of Science – Weekend Program

When demand exists, the College of Technology may offer the master's degree via innovative delivery modes. Most recently it has employed a delivery model that utilizes a combination of traditional classroom instruction three (3) weekends per semester supplemented by distance education. This program has the same credit hour and core course requirements as the residency Master. Participating students matriculate through the program as a cohort and take a predetermined set of courses over five (5) semesters. For additional information, contact the Graduate Office at: http://www.tech.purdue.edu/ProSTAR/index.cfm.

1.4. Doctor of Philosophy

The College of Technology also offers the Ph.D. in Technology to advance the practice of professionals in technology. This program requires a minimum of 90 credit hours (60 of which is beyond the master's degree) and some residency. It is not available by distance delivery. Full-time in this context includes those students with teaching or research assistantships. Pursuant to the doctoral student's faculty committee, the program may be extensively tailored to the specific needs of the candidate. Contact the Graduate Office for additional information at: http://www.tech.purdue.edu/Graduate/phd/.

SECTION 2.0. ADMISSION PROCESS

Section 2.0 of this document provides an overview to the requirements, types of admission, time limits and opportunities for financial assistance relative to graduate study in the College of Technology.

2.1. Requirements

Applicants to any of the College of Technology's graduate programs are required to submit an electronic application for admission to the Graduate School along with a resume, three letters of recommendation, a goal statement indicating their career goals and purpose for pursuing graduate studies, official original transcripts of all college coursework, and results of the GRE examination. International applicants must also submit TOEFL scores. While there are no minimum GRE requirements, the University's Graduate School's web site lists the specific TOEFL score requirements for language proficiency. **Specific additional requirements exist for areas of concentration within departments and for the Ph.D. program**. *Please check departmental websites for additional requirements.*

> ***NOTE:*** *A separate handbook exists for the College of Technology Ph.D. program.*

Only after all the necessary materials have been assembled by the CoT Graduate Studies Office, they are forwarded as a complete package to the appropriate department. There, the applicant's information is reviewed pursuant to the department's established admission criteria by the department's graduate admissions committee. Departmental admission recommendations may be one of the following:

- Admit without conditions,
- Admit with conditions (and these conditions must be specified), or
- Deny.

Departmental admission recommendations are forwarded to the College of Technology (CoT) Associate Dean for Graduate Studies for review and recommendation to the Purdue University Graduate School.

Often, potential students ask, "What are the minimum grades and GRE scores needed?" The CoT Graduate Education Committee and departmental graduate committees have not specified minimum scores because they prefer to consider the overall potential that each student presents. There are, however, well established prior performance expectations. Typically, the admissions committees seek candidates with overall undergraduate GPAs at or above the 3.0 (out of 4.0) and average or better scores on the GRE. The latter translates to scores at the 50^{th} percentile. It must be noted that many students have been out of school for many years and the transcript information is only of minimal value. More importantly, the admissions committee examines the student's background, reasons and goals for seeking entry, and determines whether the student would benefit and be successful in the program. Incoming students must have a "B" (3.00/4.00) or better average in prior study to be admitted without conditions.

2.2. English Requirement

The Graduate School of Purdue University requires that all students demonstrate proficiency in the English language before a graduate plan of study may be filed. There are three ways to meet this requirement:

1. Earn no grade lower than "B" in all undergraduate English composition courses;
   or
2. Obtain a score of 500 or higher on the Verbal Aptitude Section of the Graduate Record Examination (GRE);
   or
3. Satisfactory performance in ENGL 059 (ENGL 009 for international students), an essay test administered by the Office of Writing Review.

Non-native English speaking applicants must take the Purdue TOFEL exam before applying. If a student is admitted with the condition that the English proficiency requirement must be satisfied, work must begin during the first semester of enrollment with registration in ENGL 050 (ENGL 009 for international students). If the requirement is not met during the first semester, the student will be registered in ENGL 050 or ENGL 009 for the second semester. **The English proficiency requirement must be satisfied by the end of the second enrollment period, or eligibility to register for additional course work will be withdrawn.**

2.3. Conditional Admission

For those students admitted who do not meet unconditional admission criteria to the master's degree program (e.g., 3.00/4.00 or better average in prior study), certain other performance elements may be considered. For example, substantial career accomplishment as evidenced by the resume or high performance on the Graduate Record Examination may indicate that student potential for success is not adequately reflected in their prior academic record.

In particular, faculty reviewers of graduate applicants note the level of communication (oral and written) proficiency documented by the applicant and in cases where performance is below expectations, e.g., as demonstrated by a low GRE Verbal score, faculty may consider establishing English development experiences in addition to the program's normal requirements.

Conditional admission requires that certain minimum performance standards be established, such as "must achieve at least a 3.00/4.00 graduate index at the completion of the first 12 credits following admission to the master's degree program." In addition, admission committees may require certain undergraduate prerequisite coursework to satisfy a deficiency in the student's background.

Academic conditions of admission for all conditionally admitted students will be monitored by the College of Technology Graduate Studies Office and/or the Graduate School, depending on who has imposed the condition. Each semester the Graduate School or college will remove the eligibility to register for future sessions for all students

who failed to satisfy their conditions of admission in the previous session. Thus, there is a grace period of one semester.

Departments are to justify and indicate any conditions under which these students should have their eligibility to register restored and be allowed to continue to study for the degree. This is requested by a memo from the **major professor** and routed through the college's Associate Dean for Graduate Studies, detailing reasons why the student should be permitted to continue. Upon Graduate School approval, the eligibility to register will be restored.

2.4. Time Limitation

A candidate for the master's degree is expected to complete all requirements for the degree **within five years** from the completion of the oldest course on the plan of study.

2.5. Financial Assistance

The following two sections describe the availability of financial assistant and information about assistantship appointments.

2.5.1. Availability

A limited number of graduate teaching and research assistantships from departments within the College of Technology are available. All assistantship applications are to be directed to the Department Head of the appropriate department. Additional appointments are available from other elements of the University, such as the ITaP, the Graduate School, the library system and student housing. Details on assistantships and fellowships outside the College of Technology are available at Purdue University's Graduate School web site at http://www.gradschool.purdue.edu/funding/. Additional information may be available from the College of Technology Department Heads.

2.5.2. Assistantship Appointments

In order to provide opportunity for the student to progress satisfactorily toward the degree objective, graduate appointments will ordinarily be 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 performance toward plan of study requirements, as well as availability of positions.

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

> ***NOTE:*** *Assistantships DO NOT cover the cost of student fees assessed each semester.*

SECTION 3.0 POLICY ON MONITORING, PROBATION, AND DISMISSAL

Section 3.0 provides an overview to the monitoring, probation, dismissal and appeal policies in the College of Technology.

3.1. Minimum Cumulative GPA Requirements (in graduate courses)

The College of Technology has a specific GPA requirement for graduation as shown in Table 3.1. It is the same as the University requirement. Also shown are the GPA requirements for probation and dismissal relative to the College's programs. Sections 3.2 thru 3.5 outline the policies and procedures relative to probation and dismissal.

Table 3.1. *Graduation, Probation and Dismissal GPA Thresholds*

Graduation	3.00/4.00
Probation	2.75/4.00
Dismissal	2.50/4.00

> ***NOTE:*** *University requirements state that no grade of "D" or "F" is allowed in a course on the plan of study. Any plan of study course in which a grade of "D" or "F" is received must be repeated and completed successfully; it cannot be dropped from the plan of study.*

3.2. Monitoring

Each semester graduate student performance is evaluated to ensure that the student is performing well and will graduate with a 3.00/4.00. Procedurally this is done in the following way:

- Graduate student grades and academic progress will be monitored at the departmental level.
- Monitoring will begin after six (6) credit hours have been attempted and every semester thereafter in which the student is enrolled.
- Students are expected to maintain a cumulative grade point average of at least 3.00 /4.00 with no grade less than "B" and earn grades of "Satisfactory" in thesis/directed project research credit hours.

> ***NOTE:*** *The grade "B-" (B minus) is below the expected grade graduate student should earn in his or her courses.*

- If a student has a **semester** GPA *less than* 2.75/4.00 or a **cumulative** GPA *less than* 3.00/4.00, a letter will be drafted by the department head to the student, with a copy to the major professor, to the Graduate School, and to the student's file, indicating the last semester was determined unsatisfactory and that they are being placed on probation.

NOTE: *Graduate students that receive an incomplete in a course will have one semester and 12 weeks into the following semester to complete the course. If that is not done, the Registrar automatically makes the grade a failure.*

3.3. Probation

Probation occurs when a student performs below the CoT standards in a semester. Procedurally probation means:

- If a student's **semester** GPA falls below 2.75 or if a student's **cumulative** GPA falls below 3.00/4.00, the student will be placed on academic probation.
- The CoT Associate Dean for Graduate Studies will generate a letter informing the student, major professor, and department head of the probationary status. A copy will also be forwarded to the Graduate School and placed in the student's permanent record.
- **The student will have one semester to raise their cumulative GPA to the required level and return to good standing.** If they do not, they will not be able to register for classes the subsequent semester and will be dismissed from the program.
- Eligibility for an assistantship while on probation will be left to the Department Head's discretion.

3.4. Dismissal

- If a student's **semester** GPA is below a 2.50 or if a student's **cumulative** GPA falls below 2.75, the student will be immediately dismissed from the program.
- A student will be dismissed from the program if they remain on probation for one semester without improvement. This policy is independent of any assistantship the student may hold.

3.5. Appeal

- A student may appeal their probationary or dismissal status by contacting the Associate Dean for Graduate Studies in writing within thirty (30) days of the date of the requisite notification letter. The appeal should include the student's specific reasons for exception to the aforementioned policies.
- The appeal will be reviewed by a subcommittee of three (3) members of the College of Technology Graduate Education Committee (excluding the Graduate Education Committee representative from the student's home department).
- If the review committee recommends reinstating the student, the student's graduate advisor/chair must approve. If the graduate advisor does not approve, the Associate Dean for Graduate Studies will render a final decision.
- In cases where a student is reinstated without approval of the graduate advisor, a new advisor may need to be assigned.
- The decision of the appeal subcommittee and/or Associate Dean for Graduate Studies will be considered final and will be delivered within thirty (30) days of the student's request for exception to probation.

SECTION 4.0. MASTER'S DEGREE PROGRAM STRUCTURE

Typically the Master of Science degree requires that each student complete the requisite number of courses and execute a capstone project. The capstone project may be either a thesis or a directed project. However, some departments in the College of Technology also offer coursework-only degrees, where there may be no capstone project. Typically proposal of the capstone project occurs in the next to last semester of study (but this can vary). As a process, the Master of Science experience includes:

1. Coursework (27 to 33 credit hours)
    a. Appointment of major professor
    b. Selection of a committee (two people in addition to a chair)
    c. Filing of the Electronic Plan of Study (EPOS)
        i. Draft of the Plan of Study must be submitted by the end of the first semester of study.
        ii. A final Plan of Study must be submitted by the end of the second semester of study.
    d. Successful completion of all courses
2. Capstone Project (thesis or directed project)
    a. Capstone project proposal and proposal defense meeting
    b. Obtain appropriate certifications for research (CITI, HIPAA, FERPA, etc.).
    c. Execution of project
    d. Final oral defense of capstone project

4.1. Program Credit Hour Requirements

The master's degree program administered through the College of Technology is available in both thesis and non-thesis versions that both require 33 credit hours as a minimum. The non-thesis option may be a directed project or other alternatives offered by some departments (i.e., coursework only). Table 4.1 provides a summary of the program requirements.

Table 4.1. *Credit Hour Requirements for Master's in the College of Technology*

Requirement	**Thesis**	**Non-Thesis**	**Non-Thesis**
		Directed Project	Coursework Only
Course Credits	27 cr. hrs.	30 cr hrs.	33 cr. hrs.
Courses			
# of Required	2 courses	2 courses	1 course
# of Other	7 courses	8 courses	9 courses
Capstone Course	XXX 698*	XXX 598*	N/A
Capstone Hours	6 cr. hrs.	3 cr. hrs.	N/A
Total Hours	33 cr. hrs.	33 cr. hrs.	33 cr. hrs.

**Students take at least two semesters of credit for XXX 598 or XXX 698. The first semester is for creation and approval of the proposal. Students should work with their advisor to determine the number of credits taken for proposal credit.*

4.2. Residency Requirements

The total number of hours of academic credit used to satisfy residency requirements consists of all course credit hours that appear on the plan of study, other graduate course credit hours with grades of "C" or better that appear on the Purdue transcript, and research credit hours with grades of "S" that appear on the Purdue transcript. In fulfilling these requirements, a maximum of 18 credit hours will be allowed from any one semester (maximum hours proportional to length of summer session equals nine (9) credit hours).

4.3. Appointment of a Major Professor/Advisor

Each graduate degree plan of study is unique to the individual student and his/her background, experience, and degree objectives. To guide in the development of a degree plan, a major professor (advisor) will be appointed to chair the student's advisory committee and will assist the student through the program. A student may request a major professor in their application materials, but this request may not always be possible. It is based on advisement load, research commitments, and other factors. 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 concurrently as advocate, mentor, and supervisor of the graduate student.

> ***NOTE:*** *A student may change major professor if their research topic changes significantly as a result of their course of study.*

4.4. Graduate Advisory Committee

The student and the major professor are responsible for the selection of an advisory committee. The duties of that committee are to assist the student in the preparation of the plan of study and to offer advice during the period of graduate work. It is important that the initial advisor, whether or not she/he continues as the permanent advisor, initiate activities to assist students in becoming acquainted with potential faculty to serve on the advisory committee.

The student's master's advisory committee, at a minimum, consists of three members of the graduate faculty. The major professor and one other member should be from the College of Technology graduate faculty (refer to the section on "College of Technology Graduate Faculty"), and an advisor for the related area (see the CoT Graduate web site for a listing of the college's graduate faculty). Members of the committee need not be faculty with whom the student has taken coursework. A co-advisor may be designated when advantageous to the student and where it can build faculty experience. Students and major professors should note that if a student's 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, they may request consideration for special certification for such service. Such requests require a rationale and description of the expertise and are routed to the Graduate School via the College of Technology Graduate Office. The request for appointment of the advisory committee is made on the same form (and at the same time as) the request for approval of the student's plan of study (refer to section 5 of this handbook, titled, *Electronic Plan of Study Requirements*).

The advisory committee should be selected preferably **during the first enrollment semester, but not later than the end of the second enrollment semester.** The committee will then be in place to help the student develop the plan of study and review/approve the student's directed project proposal, which must be approved before actual work on the project may begin. The student should discuss the plan of study with their preferred potential advisory committee members and secure their permission to list them on the plan of study **before** the plan is submitted for electronic signature.

> ***NOTE:*** *The thesis proposal must be approved prior to the semester the student intends to graduate.*

4.5. Course Load Recommendations and Requirements

The maximum course load for graduate students is 18 credits (and occasionally 19 credit hours with special permission). Typically 18 credit hours translate into six (6) courses. Eight (8) credit hours is considered the full-time certification standard for graduate students by the Graduate School.

> ***NOTE:*** *To maintain full time status, international graduate students must take at least eight (8) credit hours per semester.*

Most students inquire as to how many classes they should take when they have an assistantship. Table 4.2 provides some recommendations as to how many credit hours are typical when also working as a teaching or research assistant.

Table 4.2. *Recommended Course Loading for Assistants*

Assistantship Load	Recommended Course Load
¼-time assistant	12 to 15 cr. hrs.
½-time assistant*	9 to 12 cr. hrs.
¾-time assistant	6 to 9 cr. hrs.

*Assumes ½-time is equivalent 20 working hours.

> ***NOTE:*** *A candidate for the master's degree is expected to complete all requirements for the degree within five years from the completion of the oldest course on the plan of study.*

4.5.1. Reduced Course Loads for International Students

To maintain visa status, international students are expected maintain a fulltime load. Purdue's Office of International Students and Scholars (ISS) provides information about this requirement and offers a means for international students to request permission to take a reduced course load. Appendix A provides a visual example of the form. Graduate students desiring a reduced course load should work with ISS to request this before their course load is reduced below that required by U.S. Immigration rules. See the ISS web site for more information: http://www.iss.purdue.edu/.

4.6. Registering for Courses as a Graduate Student

Purdue University provides online scheduling of courses for all of its students via the *myPurdue* system. The software used for this system is called *Banner*. Typically the student works with his or her advisor to determine the appropriate courses to take for a given semester. Then the student works with the graduate coordinator in the College of Technology to sign up for courses. Typically students can self-register. A registration PIN number is required to perform self- registration. You will be informed of your PIN number at the time of admission from the College of Technology Graduate Office. However, at times students may need an 'override' to be able to register for certain courses. More information about registering for classes can be found at the Registrar's web site: http://www.purdue.edu/registrar/.

It is the graduate student's responsibility to keep track of specific dates relative to course scheduling. These include deadlines for registration, deadlines for dropping courses and the like. The Graduate School announces these dates on its web site and typically the deadlines are emailed to students each semester at appropriate times.

4.7. Dropping and Adding Courses

To drop or add a course, the student uses the *myPurdue* system. All variable credit courses will require the Graduate Office to provide an override for the student to enroll in the course. The Graduate Office must also set the desired credit hours (when a student enrolls, the default is one (1) credit hour). Subsequently, be sure to confirm that a dropped or added course has been officially recorded by checking *myPurdue*.

Courses dropped during the first two weeks of classes will not appear on your permanent record. Courses dropped during weeks three and four will be recorded as a "W" grade on your permanent record (withdraw). Courses dropped during weeks five through nine require the signature of both the instructor and the CoT Associate Dean for Graduate Education. In such a case, the instructor must assign a grade of "W," "WF," or "WN." The end of this period is the final deadline for withdrawing from a class.

> ***NOTE:*** *A "W" simply records the fact that the student withdrew after the second week of the semester. A "WF" records that the student was failing a dropped course. "WF" grades are not included in computing the GPA. A "WN" records failing status in a course being taken Pass/No Pass. "W," "WF," and "WN" grades are recorded on your permanent record.*

Courses added during weeks two through four require the approval and signature of the instructor and CoT Associate Dean for Graduate Education. Courses may be added during weeks five through nine, but only under extraordinary circumstances. Courses added after the fourth week require the approval and signature of the instructor, the CoT Associate Dean for Graduate Education, and the head of the department where the course is offered (for non-CoT courses).

> ***NOTE:*** *Graduate students that receive an incomplete in a course will have one semester and 12 weeks into the following semester to complete the*

course. If that is not done, the Registrar automatically makes the grade a failure.

SECTION 5.0. ELECTRONIC PLAN OF STUDY REQUIREMENTS

The philosophy of the Graduate School of Purdue University is 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 such 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(s) are based on the relationship of the course content and not on the departmental course prefix.

The development of the plan of study begins as part of the initial course registration. The major professor will discuss the student's background, interests, and degree objectives as part of the preparation for the first enrollment. Based on this discussion, the major professor will request spaces in the appropriate courses. The major professor will also recommend possible related areas and advisors.

In addition to course work requirements, each student must complete and successfully defend a research project known as a directed project (XXX 598) or thesis (XXX 698). The plan of study should be developed to support this research requirement (refer to the sections on "The Directed Project" or "Thesis").

The plan of study must list all courses the student will take to meet the degree requirements. These include the names for the primary and related areas of study; the course number, course title, and credits for each course; the date when the course was or will be completed; and the research area. The plan of study is electronically signed by each member of the advisory committee and the student. After review, the plan is electronically signed by the Associate Dean for Graduate Studies. The plan is then submitted to the Graduate School for formal approval. After an approved Plan of Study is on file, committee and course changes can be made at any time up until graduation. This can be accomplished by clicking on the Create Change Request link available next to an Approved plan of study. The Change Request link will initiate a Change Request form. These procedures all occur electronically via the EPOS procedure. Refer to the following link:

https://ias.itap.purdue.edu/gradsch/HELP_PAGES/pos_student_instructions.doc

Also, be sure to review the Plan of Study Checklist to verify completeness of your EPOS before submitting it in final form:

http://www.tech.purdue.edu/Graduate/forms_documents.cfm

Upon approval by the Graduate School, the plan of study becomes a contract among the student, the College of Technology, and the Graduate School. When all requirements of the plan of study are completed satisfactorily, the student is awarded the Master of Science (M.S.) degree. Refer to the sample plan of study form in Appendix B. Appendix C shows a flowchart of the EPOS creation and approval process.

NOTE: *If a course in the plan of study is not available when the student needs it, or if the direction of the student's research topic changes, students can submit a EPOS change of plan of study. Once filed, the change request requires prior signatories to approve the requested change.*

5.1. Primary Area

All master's degree plans of study will have a Technology primary area. This primary area will have either a technology emphasis or a teaching/research emphasis. It will include between 15 and 24 semester hours (exclusive of the three (3) semester hours in the directed project XXX 598 or six (6) semester hours in the thesis XXX 698 research), with a minimum of 15 semester hours in courses with a TECH (or CoT departmental) prefix. The primary area should include the following core courses (or acceptable substitutes to be discussed with the major professor):

- IT 507 Measurement and Evaluation in Industry and Technology **or** STAT 501, STAT 511, or PSYC 600.
- TECH 646 Analysis of Research in Industry and Technology

The other courses included in the primary area are selected to enhance the career goals of the student. Undergraduate courses (300- or 400-level) may not be included in the primary area of the plan of study without special permission from the College of Technology Associate Dean for Graduate Studies.

5.2. Related Area

Each plan of study must include a related area of at least six (6) semester hours from another area. While these are typically outside the primary area, they can include additional courses from the student's primary area. In some cases, there may be two related areas if such a plan will enhance the student's professional goals. Common related areas on plans of study include Industrial Engineering, Human Factors, Curriculum and Instruction, Adult Education, or one of the disciplines within the College of Technology (e.g., ECET, MET, CGT, etc.) It is encouraged that each related area should have a faculty representative on the student's advisory committee.

5.2.1. Undergraduate Credit in a Related Area

A related area may include undergraduate courses (300- or 400-level) **only when followed by appropriate 500- and 600-level courses**, and are subject to the approval of the student's advisory committee and the Associate Dean for Graduate Studies. Undergraduate courses listed in the related area must be in excess of the baccalaureate degree requirements. Graduate School policy stipulates that 100- and 200-level courses may not appear on a plan of study and that no more than six (6) semester hours of 300- and 400-level courses may be applied to graduate work and a grade of "B" or better is required.

5.3. Credit Limitations

The combination of undergraduate excess credit, transfer credit, post-baccalaureate registrant credit, and independent study credit included in a master's degree plan of study must not exceed 15 semester hours. These credit categories are defined as follows.

> ***NOTE:*** *For students obtaining two M.S. degrees, a maximum of nine Purdue credit hours (at the 500- and 600-level) are allowed to overlap between coursework required in the two degrees.*

5.3.1. Undergraduate Excess Credit

Undergraduate students attending Purdue University who have time available to take courses in excess of their undergraduate degree course requirements may earn a maximum of twelve (12) semester hours of credit in 500- and 600-level courses which were taken and declared as graduate work on Registrar's Form 350 at the time that grades were filed for that semester. Undergraduate excess credit will be certified by the Registrar only if the student:

1. Took the course during the senior year;
2. Received a grade of at least "B" in the course;
3. The course was designated as a graduate course; and
4. The student's work in the course was performed at the level required for graduate students in the course.

5.3.2. Transfer Credit

A maximum of half the required course credit hours completed at another institution may be included in the master's degree plan of study. Graduate School policy states that transfer credit will be allowed only for courses in which a grade of "B" or better was obtained. A catalog description of the course and an official transcript showing completion of the course and the grade received must be submitted with the plan of study.

5.3.3. Post-baccalaureate Registrant Credit

The Graduate School has created an enrollment category known as "post-baccalaureate registrant" to enable those who have a Bachelor's degree to enroll in courses that are considered appropriate to the registrant's personal objectives. A limited amount of credit earned in this category is available for inclusion on a plan of study at the discretion of the advisory committee, the recommendation of the Associate Dean for Graduate Studies and the approval of the Graduate School.

A maximum of twelve (12) semester hours of graduate credit earned as a post-baccalaureate registrant may be included in a plan of study; no post-baccalaureate course in which a grade of less than "B" was earned will be permitted on the plan of study.

> ***NOTE:*** *The sum of credits earned as undergraduate excess credit and in post-baccalaureate registrant status that may be used on a plan of study is limited to twelve (12) semester hours.*

5.3.4. Independent Study Credit

A maximum of six (6) semester hours of independent study credit (e.g., OLS 590, CGT 590 etc.) may be included in a plan of study. Independent study courses require a specific proposal and approval process as defined in Section 6 of this handbook.

5.4. Capstone/Synthesis Requirement

Most College of Technology master's degree Plans of Study must contain a capstone/synthesis requirement that is either a directed project or a thesis. A comparison of these two requirements is presented in section 7.0 of this handbook. When completing the EPOS, XXX 598 or XXX 698 is not shown in the list of courses. Instead, these courses (and associated credits) are acknowledged in the notes field. For example, the notes field may include the following:

> "The student will complete six (6) credit hours of TECH 698 to satisfy the thesis requirement."

Or,

> "The student will complete three (3) credit hours of TECH 598 to satisfy the directed project requirement."

Students who are enrolled in a "course work only" degree should consult with their department's graduate representative to ascertain how the notes field should be completed.

5.5. Examination Requirement

Each thesis or directed project candidate must pass a final oral examination in order to graduate. Coursework only students may or may not include a final oral examination. Consult with your major professor.

The final oral examination is considered public and is taken during the session in which candidacy is declared. The candidate's 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 the student to defend the directed project or thesis. The final oral examination must be scheduled through the College of Technology Office of Graduate Studies no less than three weeks prior to the date of the examination. If the student's performance is not acceptable in one or more areas, the examining committee will specify what the student must do in order to eliminate any deficiencies.

5.6. Examining Committee

An examining committee will normally include the members of the student's advisory committee. Additional members may be appointed by the Associate Dean for Graduate Studies. The advisory committee chairperson (the major professor) may recommend additional members for appointment (see *Section 10.0. Post-Project/Thesis Activities*).

5.7. Publication Requirement

Scholarship plays a very important role in the preparation of M.S. and Ph.D. students in the College of Technology. Graduate students need to understand the role of scholarship in higher education as well as its importance in disseminating new knowledge. The CoT values the role and contribution of its faculty and students in its efforts to engage in discovery with impact. It is important that graduate students learn how to create and present scholarship as part of their academic training. For these reasons, the College of Technology requires all Ph.D. students and M.S. thesis students to engage in scholarship.

M.S. students are required to have at least one of the following in "in review" or "published" status before they undertake their final thesis oral examination:

- Refereed or reviewed journal article
- Refereed or reviewed trade journal article
- Refereed or reviewed conference presentation
- Reviewed conference poster

Exceptions to the above requirements have to be approved by the student's committee chair and the Associate Dean for Graduate Studies. Some other form of scholarship should be substituted for the above if the student requests an exception.

5.8. Recommended International Experience

Sources cite many benefits of study abroad programs for both graduate and undergraduate students, as well as faculty, within the university environment. In addition to learning about globalization and related issues, the experience of short term study outside the US, conducting international presentations, and leadership or involvement in international projects or project teams can have a positive professional affect on students. Purdue is a global institution and in the Strategic Plan one of the three major goals is "Meeting global challenges by enhancing Purdue's presence and impact in addressing grand challenges of humanity". For these reasons, an international experience is recommended for all graduate students in the CoT.

It is recommended that M.S. and Ph.D. students in the CoT participate in one of the following:

- Enrolling in one graduate level course dealing with globalization, internationalization, or culture (examples: ECON 534, EDCI 685, EDST 504, FR 581, GER 581, HK 581, JPNS 543, MET 527, MGMT 601 or 649, OBHR 650, OLS 578, POL 530, RUS 581, SPAN 682).
- Participate in a short-term study abroad course
- Participate in the Atlantis concurrent degree program
- Present a paper at an international conference outside the U.S.
- Participate in an international industrial project that requires travel abroad or interaction with international participants

SECTION 6.0. REGISTRATION FOR AN INDEPENDENT STUDY COURSE (XXX 590)

Independent study courses may be included in a graduate plan of study. A copy of the final product or a complete report of the study must be submitted to the professor in charge of the independent study. Failure to do so may result in an incomplete or failing grade. This work must be independent of other required course studies (previous, existing, or future). ***Registration in XXX 590 may not be initiated until all of the following procedures have been satisfied. (Note XXX refers to departmental prefix code.)***

To enroll in an independent study the student must:

1. Obtain an independent study authorization form from the Graduate Studies web site at http://www.tech.purdue.edu/pages/graduate_programs/forms_documents.html. This form is a request for permission to enroll in an independent study course (refer to the sample form in Appendix D).
2. Meet with the major professor to discuss the proposed study and secure his/her approval.
3. Prepare a detailed prospectus (typed or word processed, APA format, title page) including the following sections:

    a) Problem: Describe the problem you propose to address clearly, delimit the problem area, and provide a rationale for its significance.
    b) Purpose and Objectives: Provide a numbered listing of all educational objectives to be accomplished.
    c) Define how the course relates to your degree objectives, i.e., what it will do for you.
    d) Procedures: Explain the methods to be used and any unusual requirements for materials, equipment, or facilities. A graphic time line and two progress reports must by submitted by the student to the professor in charge between weeks three and ten of the semester. Provide a narrative, flow chart, or outline of step-by-step procedures used to complete the study. If applicable, provide a supply and materials cost worksheet.
    e) Outcomes: Itemize and describe the deliverables/products, i.e., tangible results (software source code, papers, reports, products, or summaries) of the study and list whom will receive copies (office, professor in charge, student).

> ***NOTE:*** *This prospectus should be about one to three pages in length. A good way to prepare a prospectus is to subhead it using the above categories and present the information below each subheading.*

4. Meet with the professor (the professor in charge) who will guide the study to discuss the prospectus.
5. Revise the prospectus as necessary. Complete the INDEPENDENT STUDY AUTHORIZATION FORM (refer to the sample in Appendix D), attach it to the prospectus, and secure the signatures of the major professor (academic advisor), the professor in charge, and this professor's Department Head.
6. Submit the signed copy of the request to the Office of Graduate Studies along with a completed Form 23. The Form 23 MUST NOT be submitted for processing prior to securing the necessary approvals for the prospectus.

> ***NOTE:*** *Independent study credit may not be used for graduate research credit (i.e., as a substitute for required XXX 598 or XXX 698 credit hours).*

SECTION 7.0. THESIS/DIRECTED PROJECT

The following sections describe in detail information related to the directed project and thesis requirements within the College of Technology. Students completing a coursework only degree should consult with their department's graduate representative or their advisor to ascertain completion requirements for those degrees.

7.1. Comparisons Between the Directed Project and the Thesis

The following gives a brief comparison between the directed project and thesis. This comparison is simplistic in nature and is by no means absolute. Students and advisors need to work together to establish a common understanding of the scope, nature, format, expectations and deliverables of the student's capstone endeavor.

> ***NOTE:*** *For a comprehensive listing of all the contents or sections of the directed project and thesis, see sections 8.10.1 and 8.11.1 respectively.*

Directed Project	Master's Thesis
Total immersion in corporate environment, i.e., business/industry focus	Total immersion in academic environment, i.e., academic/university focus
Directed Project Format	Thesis Format
• Executive summary o Section 1: Introduction o Section 2: Literature/Prior Work o Section 3: Procedures employed o Section 4: Data and Results o Section 5: Conclusions, recommendations, and financial implications o References o Appendices	• Abstract o Chapter 1: Introduction o Chapter 2: Review of the literature o Chapter 3: Methodology o Chapter 4: Presentation of Data o Chapter 5: Conclusions, Discussion, and Recommendations o List of References o Appendices
Oral Defense	Oral Defense
Outcomes	Outcomes
• Document Outcomes o Published or not Published o Stored in corporate repository (if applicable) o Stored in E-Pubs section of Purdue Library • Career Outcomes o Future leaders in industry	• Document Outcomes o Published or not published o Documented in *ProQuest* repository o Stored in E-Pubs section of Purdue Library • Career Outcomes o Future leaders in academia
Resume	Vita

7.2 The Directed Project - A Definition

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

7.2.1. Directed Project Characteristics

- Written for industry
- Includes a business presentation
- Results in a) a tangible product of value to business and industry, or b) education for business and industry
- Can be measured in dollars, but this is not a requirement
- Usually involves a technology problem solving activity
- Is documented to permit replication
- Can be published, but this is not a requirement
- Usually involves some form of business or industrial validation
- Generally requires application of a synthesis of coursework

7.2.2. Purposes of Directed Projects

- Ability to identify a business or industry relevant solution to a technology problem
- An ability to define and/or validate a business or industry relevant problem
- Addressing of a technological problem in a systematic and replicable manner
- Effective use of technical/professional research and/or development procedures
- Identifying criteria for success/solution of the problem
- Gathering information appropriate to the problem by employing business research procedures (e.g., 70% business/industry sources and 30% academic sources versus the reverse)
- Ability to 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
- Prepare and deliver a presentation in a form customary to business and industry

7.2.3. Effective Directed Project Practices

1. Directed projects should require students to select and employ effective research and development procedure(s) to address the problem.
2. 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 the education of individuals in business or industry.
3. Directed projects should incorporate a strategic financial overview component depicting such characteristics as cost, ROI (Return on Investment), etc.
4. A component of the directed project should be an Implementation Plan (i.e., recommendations for deploying the developed solution). This plan should include the suggested near and mid term steps.
5. Industry partners are encouraged for validation or other involvement.
6. 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 performance.

7. Employ either a) business or industry style manual 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.
8. Directed projects are necessarily filed in Purdue's library (via the E-pubs section). Projects containing intellectual property are marked as confidential and not made publicly available.

7.3 The Master's Thesis

A master's thesis in technology is a significant piece of original work, typically involving research, a formal written description of that research, and an oral defense of the research. Typically, the thesis contributes new knowledge to the discipline against the backdrop of what others have contributed to the topic as well (via the literature review). The tone should be scholarly, with a primary audience of other researchers. The thesis is more than a term paper but less than a doctoral dissertation. For example, a synthesis and description of others' research and writings alone may be appropriate as a term paper. While a comprehensive "review of the literature" must be included as a section of the thesis, it is not sufficient by itself. On the other hand, a doctoral dissertation might use an experimental or survey methodology involving large numbers of subjects on a national or international level. A master's thesis may be narrower in scope, being restricted to a local problem, a smaller number of subjects, or a conceptual model. A thesis should not just be an expression of your opinions; conclusions and opinions must be based on research results and analysis.

To pursue the development of a thesis, students must first develop a thesis proposal and secure its approval by their master's committee. A formal meeting of the student's graduate committee is required to evaluate the proposal and the College's Graduate Studies Office is to be provided a copy of the approved proposal carrying the signatures of each committee member. Proposals are developed pursuant to student enrollment in 1 to 3 hours of XXX 698. Subsequent enrollment in XXX 698 for the additional required credits is contingent upon filing of the approved proposal. Students may not receive more than six (6) credits for XXX 698 on their EPOS.

7.3.1. Key Points about the Thesis

1. A thesis typically addresses a theory or knowledge gap. Often it does so by testing or evaluating or by developing and validating a concept or methodology.
2. Theses require documentation of the significance of the problem or gap in knowledge they address (i.e., they make a contribution to the discipline).
3. All theses result in a clearly identifiable new knowledge of significance (requires documentation of originality).
4. Generally theses involve the use of one or more of the accepted research paradigms and established research techniques. They may be quantitative or qualitative in nature. They may involve historical or philosophical, scientific or technological perspectives. They may be experimental or correlational in methodology. Other forms/paradigms of research scholarship may also be employed if approved by the committee.

5. The thesis format must follow the *Purdue Graduate School Thesis Guidelines* as supplemented and detailed in this handbook. The format is APA citation format with some specific differences (see section 8.5 and 8.6).
6. Theses demonstrate a high level of reasoning, effective written communication, and are documented in a form that permits replication.
7. Theses are necessarily filed in Purdue's library (via the E-pubs section). Thesis containing intellectual property are marked as confidential and not made publicly available.
8. Theses are filed with the University and the *ProQuest* Repository (http://www.proquest.com/). Thesis containing intellectual property are marked as confidential and not made publicly available.

SECTION 8.0. DIRECTED PROJECT AND THESIS PROCEDURES

Section 8.0 outlines specific procedures related to completing the capstone requirement of a directed project or thesis. Procedurally a student must:

a) Enroll in XXX 598 (typically one (1) credit hour) or XXX 698 (typically one (1) credit hour) to generate and successfully defend the directed project or thesis proposal. Proposals typically include sections 1 thru 3 (directed project) or chapters 1 thru 3 (thesis).
b) Defend proposal in front of graduate committee. The graduate committee is comprised of three faculty. Students typically do a 20 minute presentation with sufficient time remaining for committee members to ask questions and help guide the proposed project.
c) Obtain appropriate approvals (if applicable) to conduct research (CITI, IRB, HIPAA, FERPA, etc).
d) If approved, execute the directed project or thesis (during this time students enroll in subsequent required hours of XXX 598 or XXX 698).
e) Upon completion of the project and associated documentation:
    a. Thesis students must meet with the CoT Thesis Advisor for approval of their format and then defend project in front of graduate committee.
    b. Directed project students must defend project in front of graduate committee.
f) Upon successful defense of the project:
    a. Thesis students must deposit the thesis with the University, with the College, and with the committee.
    b. Directed project students must deposit the project with the College and with the committee.

8.1. <u>Directed Project XXX 598 Enrollment</u>

Exact enrollment timing can vary, but at least two consecutive enrollments in XXX 598 are required. Typically, **the first enrollment is for one (1) semester hour of credit in the next-to-last** *(but earlier enrollment is permitted if appropriate)* **academic term**. During this academic session, a proposal is developed and approved by the advisory committee. Subsequent registration in XXX 598 is not permitted until the approved and signed proposal has been filed in the Graduate Studies Office. **The second XXX 598 enrollment is for two (2) semester hours of credit**, in which the study is conducted, the final report written, and the study defended in an oral examination.

> ***NOTE:*** *The directed project proposal defense and the directed project final defense CANNOT occur in the same semester.*

Should the student not complete the project in the two enrollment periods, s/he is required to enroll for one (1) semester hour of credit each term until the project has been completed. The candidate must be enrolled in XXX 598 for at least one (1) semester hour of credit in the academic session in which the degree is awarded.

8.2. Thesis XXX 698 Enrollment

Exact enrollment procedures can vary, but at least two consecutive enrollments in XXX 698 are required. Typically, **the first enrollment is for one (1) semester hour of credit in the next-to-last** (but earlier enrollment is permitted if appropriate) **academic term**. During this academic session, a proposal is developed and approved by the advisory committee. Subsequent registration in XXX 698 is not permitted until the approved and signed proposal has been filed in the Graduate Studies Office. **The second XXX 698 enrollment is for three (3) to five (5) semester hours of credit**, in which the study is conducted, the final report written, and the study defended in an oral examination.

> ***NOTE:*** *The thesis proposal defense and the thesis final defense CANNOT occur in the same semester.*

Should the student not complete the project in the two enrollment periods, s/he is required to enroll for one (1) semester hour of credit each term until the project has been completed. The candidate must be enrolled in XXX 698 for at least one (1) semester hour of credit in the academic session in which the degree is awarded.

8.3. Grades for XXX 598 Directed Project Research

Performance in any XXX 598 Directed Project course is graded using the following scale:

- Pass – used where the student has met or exceeded requirements
- No Pass – used where the student has not met requirements and has not invested appropriate amounts of effort
- Incomplete – used where the student has invested appropriate amounts of satisfactory effort but the project is not yet finished

8.4. Grades for XXX 698 Thesis Research

Performance in any XXX 698 Thesis Research course is graded using the following scale:

- Satisfactory – used where the student has met or exceeded requirements for satisfactory progress.
- Unsatisfactory – used where the student has not met requirements and has not invested appropriate amounts of effort.
- Incomplete – used where the student has invested appropriate amounts of satisfactory effort but the project is not yet finished.

8.5. Directed Project or Thesis Proposal Defense

Once the directed project or thesis proposal has been completed (the proposal typically includes the first three chapters of the thesis, or the first three major sections in the directed project), the student works with the graduate chair to establish a meeting of the graduate advisory committee for defense and approval of the proposal. Typically the student does a 20 to 30 minute presentation, with sufficient time left to answer questions.

Once the proposal is approved by the committee, a copy of the CoT Form 2 (signed by all committee members and the graduate student) and the final proposal are deposited in the CoT Graduate Studies office. See Appendix E for an example of the CoT Form 2.

> ***NOTE:*** *The proposal defense and the final defense of either the thesis or directed project CANNOT occur in the same semester. The proposal defense meeting must be scheduled two (2) weeks in advance of the date of the proposal defense. The proposal must also be provided to the committee two (2) weeks in advance of the date of the proposal defense.*

8.6. APA and Formatting Requirements for Directed Projects and Theses

Theses in the College of Technology follow the university guidelines for formatting. Generally the formatting is aligned with the APA parenthetical citation format with some specific additions. Directed projects in the College of Technology generally follow the same format, however at the discretion of the chair of the student's directed project committee, the student may be directed to use a different format.

Theses and directed projects (for both proposals and final documentation) should utilize the document templates provided by the university and/or college. Templates for Word 2007 and Latex exist. Templates are provided on the following two URLs:

- University Templates: http://www.gradschool.purdue.edu/thesis2.cfm
- CoT Templates: http://www.tech.purdue.edu/Graduate/forms_documents.cfm

> ***NOTE:*** *The Microsoft Word template is available via the university's web site. Those students wanting to use Latex should use the template provided on the CoT web site.*

Most students use the Microsoft Word templates as the basis for formatting their proposals and final documentation. The templates include styles for heading elements, tables, figures, captions, et cetera. It is recommended that students use the templates for formatting their proposals and final documents.

8.6.1. Notes about the Templates

The following lists some things to note about using the templates and formatting in general:

- In the required course TECH 646, students will be familiarized with the templates and use them to generate their projects in the course. Most students take TECH 646 in the same semester that they intend to defend their proposal.
- The University template will not automatically format all elements as needed within the College of Technology. Specific elements such as: figure captions, table captions, table verticals, table of contents, and list of tables and figures will require some manual adjustments to get them to format correctly.
- All students who do a thesis will be required to have a thesis format meeting prior to their final oral defense of their thesis. The CoT Thesis Format Advisor is

willing to meet with any student who needs an introduction to the thesis templates prior to the creation of their proposal. Students may email the CoT Thesis Advisor to set up a meeting or to get examples of prior formatted theses.

- The Graduate School at Purdue typically hosts workshops on the use of the thesis templates each semester. Consult the Graduate School web site for the dates and times of these workshops.
- Students who are doing a directed project and have been directed to use the APA parenthetical citation format should use the thesis template. The only differences or changes that a directed project student will need to make is:

    - Replace the thesis cover page with the directed project cover page (see section 8.7.1 for more information).
    - Change the major heads (i.e., first level headings) from "Chapter" to "Section". One may also need to change the major heading names (e.g., change "ABSTRACT" to "EXECUTIVE SUMMARY."

- Other specifics of the format can be seen in an example document that can be used as a guide for formatting theses and dissertations (http://www.tech.purdue.edu/cgt/academics/graduate/mohler_dissertation.pdf).

8.7. Preparing Directed Project and Thesis Proposals

Generally each proposal has similar sections, but the order of the sections may vary as every individual and every proposed project is unique. The exact approach that the student takes is ultimately at the discretion of the major professor (advisor) and the student's graduate committee.

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—nothing more (or less). While COT 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. Typically, proposals are 30-50 pages (including figures, tables, and references but not counting appendices) to communicate essential detail.

Beyond content, there are two important factors in the writing of any professional paper, be it a proposal or a final report. One factor is format; the other is style. Format is the physical layout of a paper. Rules for indention, type face, line length, etc., are considered format issues. Style requirements are created to facilitate clear communication. Globally, style indicates the manner of expression and the sequence in which material is organized. At a micro level, style concerns formality, person, tense, spelling, and abbreviation standards. Both format and style are important, and both have their place. Most publication manuals include both style and format guidelines.

Proposals are always written in future tense. Thus, statements that refer to procedures should be stated as, "This proposed study will collect data using . . ." or "Results of this study will be used to . . . ." Similarly, College of Technology standards

recommend that the proposal be written in third person. However, depending on the type of work being executed, first person writing may be acceptable. For example, most quantitative research projects use third person. Most qualitative research projects use first person. Students should consult with their graduate chair and discuss which is appropriate based upon the direction of their research and the methodology they intent to employ.

8.8. Directed Project and Thesis Proposal Contents

The following sections provide an overview of the major parts of a directed project or thesis proposal.

8.8.1. Directed Project Cover Page

The cover page must follow the format shown in the sample in Appendix F. This format includes spaces for each advisor to sign and date the proposal. The original signed proposal must be submitted to the Office of Graduate Studies in the College of Technology following the proposal defense meeting and as soon as it has been signed by all committee members. This original document then becomes the contract for the directed project. Students must also submit CoT Form 2: Acceptance of Graduate Proposal (see Appendix E).

> ***NOTE:*** *The same format is used for the directed project's final report cover. Cover pages are available from the Graduate Studies web site at: http://www.tech.purdue.edu/Graduate/forms_documents.cfm.*

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, the second person from the primary area next, and then each related area advisor. The committee member's relationship to the plan of study should be listed below his/her name. Thus, if the primary area on the plan of study is listed as "Technology", the committee chairperson (major professor) and the second person from the primary area would be listed as follows.

Susan P. Jones, Chair
Technology

Fred Ross
Technology

If the plan of study included 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

8.8.2. Thesis Cover Page

The thesis cover page is established based upon the University formatting guidelines. Appendix G shows an example of the thesis cover page. Note that the thesis and dissertation use the same page format. The thesis template (if macros are turned on) will allow the user to select the appropriate elements from a drop down list. Students should fill in the thesis title (in all caps), type (Thesis), name, and graduate month and year of the thesis cover page.

Unlike the directed project cover sheet, the thesis cover sheet does not have places for the graduate committee members to sign. Nevertheless, once the thesis proposal is approved, like the directed project proposal the thesis proposal is filed with the Office of Graduate Studies in the College of Technology following the proposal defense meeting. This original document then becomes the contract for the thesis. Students must also submit CoT Form 2: Acceptance of Graduate Proposal (see Appendix E).

8.8.3. The Executive Summary/Abstract

The student must prepare a one (maximum) page abstract that succinctly describes the proposed problem to be addressed, purpose for the study, the significance of the proposed study, an overview of the proposed methods to be employed and of the anticipated deliverables. Typically this section is less than 400 words. For the directed project it is called an executive summary. For a thesis, it is called an abstract.

8.8.4. Introduction

The form of the introduction will vary with the nature of the proposed project, however it usually does not have a heading. Typically it ranges from one to two pages in length. It is important to remember that this is the sole chance to establish a frame of reference in the reader's mind. Appropriate introductions are brief and designed to establish the need for a study. There is no "right way" to write an introduction. There are, however, several possible ways to craft an introduction that will accomplish its intended goal. One common method is to identify the problem in a global way (without specifics). 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.

8.8.5. Statement of the Problem

There is no section of a proposal that gives beginning proposal writers more challenge than the "Statement of the Problem" section. Too often early drafts present either a restatement of the introduction, a detailed description of the methods to be used, or a suggested solution. None of these are appropriate statements of the problem. A problem is something that is wrong. 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 and not simply a problem space. One test of the quality of a problem statement is always, "Could the problem be recognized if the statement were being read for the first time?"

8.8.6. Research Question/Hypotheses

Once the statement of the problem is generated, where applicable, the research question and hypotheses follow. The research question is a testable statement of the problem. For example, maybe the statement of the problem acknowledges that a new method of learning is needed within a particular class. The research question would then be phrased, “What is the effect of learning technique X on scores in class Y?” This statement would be used to generate hypotheses that could then be tested statistically.

Another example might be that a new algorithm is needed to solve a problem on in some computer domain. The research question might be, “Can an algorithm be developed to solve computer security in educational environments?” In this example, rather than statistics being used, the student might create the algorithm, test it, to see if it works or does not work under certain conditions.

A final example might be that company X needs to solve a workflow issue in a manufacturing process. The research question might be, “Can software X be used to make the workflow in company ABC more efficient and effective?” In this example, maybe the student will implement the software and then report on the effect related to efficiency and effectiveness.

While these are merely examples (and should not be assumed to fully define the wide range of technology theses or directed projects), nearly all projects should have a defined research question that is derived from the statement of the problem. Such a question should also be testable. Whether a thesis or directed project has hypotheses will depend on the type of research being conducted (quantitative or qualitative).

8.8.7. Significance of the Problem

Once the problem has been stated, the significance of the problem must be established. The significance section should be drafted in a manner that removes any question of the importance of the proposed study. This is the part of the proposal in which the proposed project can be tied to the student's overall plan of study and career goals. Generally, this section should "sell" the project as being worthy of doing in the business/industry and/or academic/disciplinary context. Often students will also deal with how or why this is important beyond the confines of Purdue. What contribution will be made to industry, academia or the world at large as a result?

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. However, this should not be overdone. Selection of two or three major supporting pieces of literature is sufficient.

8.8.8. Statement of the Purpose/Scope

Once the problem and its significance have been stated, the purpose of the project must be described. Here is where the student indicates what they propose to do about the problem, that is, what part of it they wish to address and what the deliverables of their work will be. Often this section will also be used to define and limit (generally) the scope

of the project. Typically the nouns and verbs that are a part of the statement of the problem or research question will be clarified and bounded. Later in the proposal the assumptions, limitations and delimitations provide further insight related to the scope and outline specific details related to scope limitation.

8.8.9. Definitions

Definitions must be included in a proposal whenever it is necessary to inform the reader of the unique way in which the terms are to be used in the proposed research. For example, if learning is to be defined as "a change in behavior", both the entering and terminal behaviors must be defined. But, when terms are used in standard ways, it is not necessary to include the definitions.

An important issue to remember related to definitions is that each definition should have an associated citation. The students use (and definition) of terms should be based upon the academic or industrial literature. As such, because definitions usually use the words of others, most definitions are typically directly quoted source material. When this is the case, the citation should include source, date, as well as page number where the material occurs.

Definition lists usually also include acronyms and abbreviations. Be sure to spell out all acronyms or abbreviations not only in the definitions list, but also in the first instance of their use in the body text of the proposal. The sample paragraph below is what you should NOT do.

> 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?

The preceding paragraph demonstrates the inappropriate and excessive use of acronyms. If acronyms are used to reduce volume/repetition in a proposal, convention requires the term to be spelled out in full the first time it is used and then followed by the acronym in parentheses. Thereafter, the acronym may be used in lieu of the full term. Even when spelled out on first use, abbreviations or acronyms should appear in the definition list.

8.8.10. Assumptions

Every study requires some assumptions; they will vary with the type of problem. Typically assumptions are things that could affect the results of the project, but are beyond the researcher’s control. 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.

8.8.11. Limitations

Limitations are descriptions of potential weaknesses of a study. If the student knows about these at the time of generating the proposal they are advised to 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. When this occurs, these new limitations are to be added to the limitations section of the final project report and they must be taken into account when discussing the project conclusions.

> ***NOTE:*** *The approved proposal is the contract for the study. If the proposal were ambiguous about its limits, the student could be required to gather further information to fill in missing gaps. It is very important to outline limitations in the proposal as they often assist in making sure committee expectations and student expectations match.*

8.8.12. Delimitations

Delimitations are restrictions in the scope of a project, that is, specific statements about things that you will NOT address. There are always constraining factors in a study. This is particularly true of 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. However students must strike appropriate balance between generalizability and resource limits.

> ***NOTE:*** *Delimitations are distinctly different from limitations. A limitation is a potential weakness in a study. A delimitation is a specific, conscious limit in scope. Limits affect inference; delimits affect breadth of study.*

8.8.13. Literature/Prior Work/Review of Literature

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.

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 review of the literature sections include some appropriate description of four sections:

- A description of the problem and its significance
- 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 summary of the review of the literature section

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. Only the most germane or seminal studies should be included.

Committee members will typically ask discipline- and literature-based questions regarding the problem, significance, purpose and procedure sections. While it is imperative that the proposal's literature review be summarized, it is equally important that extensive literature review be done before undertaking the writing of the proposal. It is infinitely easier to do a thorough research review prior to the writing of the proposal for another reason: the more the problem is studied, the more possible solutions will be discovered. Also, it should be noted that reviewing of the literature does not cease after a proposal is accepted. Typically, effective researchers/developers continue to review the most pertinent literature throughout their conduct of the study. Subsequently, all appropriate literature will be integrated into the final report/thesis, so the time and effort will not be lost.

The review should generally concentrate on the current literature. For example, if the student is interested in a "Hawthorne effect" study, reference to the original work is only appropriate in a historical context. Failure to review the current literature can fatally flaw the proposal. A study that has recently been conducted may inadvertently be proposed.

8.8.14. Procedures/Methodology

All procedures to be used in the proposed study should be defined. Whenever possible, the proposed procedure should be justified by reference to other published studies that were used and recommend the steps defined. This will insure that the advisory committee understands the steps the student wishes to take and establishes those steps as appropriate in other published studies.

Directed projects and theses in the College of Technology typically include the creation of something and an assessment of it. The "something" might be an intervention to be used on humans, an apparatus, a new process, a new technology and so forth. However, this alone is not sufficient for a directed project or thesis. The thing created must also be assessed or evaluated. This assessment could be a physical test (such as testing the new thing to see how it performs), a statistical test (such as comparing measures before and after and executing statistics on it to evaluate how it performs).

Most directed projects and theses can be classified along multiple dimensions as to the type of research being done. Projects can fall in to the following classifications:

- Quantitative, qualitative or mixed methods
- Clinical or technical
- Human subjects or "things and stuff"
- Theoretical or applied

The important thing to note about research in the College of Technology is that there is not one type or only one class of research. Research in the College of Technology is as varied as the physical attributes of the students who choose to pursue their degree within it.

8.8.15. Time Action Plan

A time action plan establishes the time frame in which the conduct of the proposed study will occur. This is typically only required in directed project proposals. 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 the student's proposed time allocation for each major component of the project. Many proposed studies will demand a time action plan. One of the most frequent ways to document the time action plan is to use a GANT Chart as shown in figure 8.1.

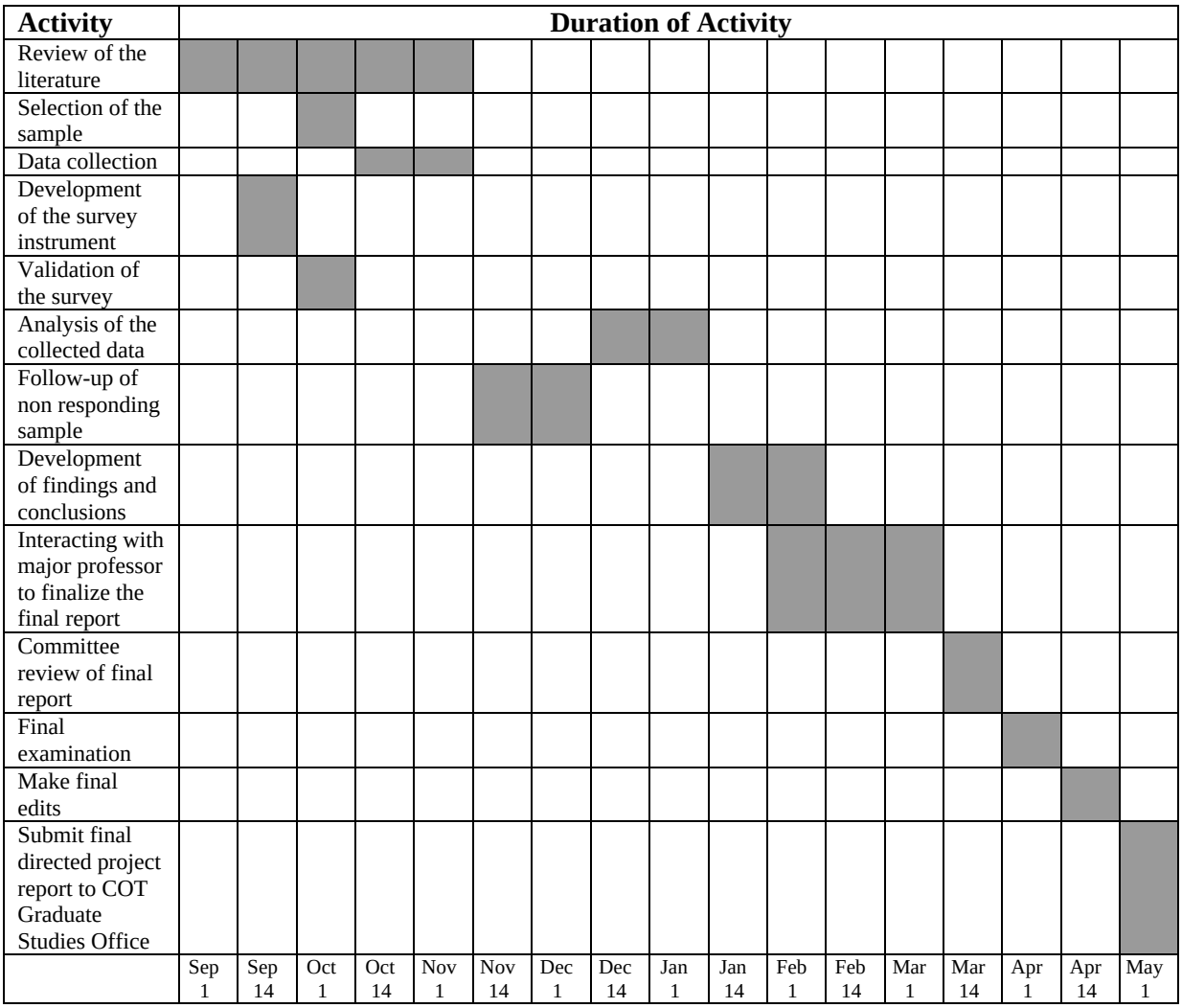
8.8.16. References/List of References

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 (thesis) or the style guide selected by your advisor (directed project). If your advisor does not specify a format for a directed project, it is recommended that you use the APA format.

8.9. Obtaining Permissions to Conduct Research

To conduct research often requires various types of permission, depending on the type of research being conducted. For example, use of human subjects (even for what many consider innocuous research such as anonymous surveys) requires IRB approval. Purdue University's Office for the Vice President for Research (VPR) provides information on the necessary approvals needed for various types of research (http://www.purdue.edu/research/vpr/). Graduate students are encouraged to discover the type of permissions they might need to obtain by reviewing the materials provided online

via the Vice President for Research's (VPR's) web site, discussing it with the chair of their graduate committee, and reviewing the available workshops provided by the Graduate School's Responsible Conduct of Research (RCR) web site (http://www.gradschool.purdue.edu/RCR/).



(Note: Individual procedures vary, so the above activities should not be considered complete.)

Figure 8.1. An example GANT chart, which is a commonly used vehicle for planning in directed project and thesis proposals.

8.10. Preparing the Final Directed Project Report

The directed project final report uses the project proposal as its foundation. During the proposal development process, a procedure was evolved that should have been followed to conduct the project. The final report now describes what exactly was done, and what the findings and conclusions are. Any deviations from the proposal must also be noted and justified.

The tense found in the proposal is changed from future (what is planned) to past (what was done) when converting the proposal document into the final report. The information contained is not changed, however. Variations between what was planned and what actually occurred will be contained in one of several new sections as part of the final report.

8.10.1. Final Report Contents

The final report will typically retain the following sections of the proposal:

1) Cover page
2) CoT Form 3: Research Integrity and Copyright Disclaimer
3) Copyright & Dedication (optional)
4) Acknowledgements
5) Table of Contents
6) List of Tables
7) List of Figures
8) Executive summary
9) Statement of the Problem
10) Significance of the Problem
11) Scope of the Study
12) Purpose of the Study
13) Research Question/Hypotheses (if applicable)
14) Definitions
15) Assumptions, Limitations & Delimitations
16) Review of literature
17) Procedures
18) References

NOTE: *The Time Action Plan of the proposal is not included in the final report.*

The following sections are added to the original proposal items (see section 8.10.3 thru 8.10.5):

1) Limitations (expanded)
2) Findings
3) Conclusions
4) Discussion
5) Recommendations (for implementation and/or further research/work)
6) Implications (if appropriate)

Thus, the final directed project report is typically structured as follows:

1) Cover page
2) Abstract
3) Introduction
4) Statement of the Problem
5) Significance of the Problem
6) Scope of the Study
7) Purpose of the Study
8) Research Question/Hypotheses (if applicable)
9) Definitions
10) Assumptions, Limitations & Delimitations
11) Review of literature
12) Procedures (instrumentation & data collection)
13) Data or Findings
14) Conclusions, discussions, and recommendations
15) References
16) Appendices (as required)

8.10.2. Delimitations and Limitations

During the proposal process, the delimiting factors were noted. These are variables or dimensions used to restrict the scope of the project, that is, to clarify what will be excluded from consideration in a given study.

Limitations, on the other hand, are factors that potentially weaken a study or that reduce its generalizability. Generally, these are factors that are out of the control of the researcher or are mistakes that occurred and could not be corrected. Occasionally these are known at the time of the proposal but more frequently they arise only during the conduct of the actual project/study.

For example, if one planned to survey a particular segment of a population, e.g., new students at Purdue, this would be a delimitation. On the other hand, if this survey's response rate was only 13% and if it could not be raised by any methods, this would cast doubts on the reliability and validity of the survey data. Since this occurred during the performance of the project, it was an unanticipated factor that results in a significant weakness in the project. It will be up to the committee members to decide whether the overall project was conducted well enough to be acceptable or whether the limitation is so serious that it renders the study unacceptable. Academic integrity and the student's commitment to ethical principles require the presentation of all known limitations regardless of possible consequences.

8.10.3. Findings

In this section, the results of the project are reported and discussed. When reporting findings, simply report factual information. This might be test scores, changes observed in lab performance, etc. If useful, these findings can be followed by discussion that interprets or explains the significance of the findings.

Students are reminded that the directed project is the capstone of the master's degree program. Regardless of the data analysis outcomes of the project, it is a success. Often there is a preconceived notion of what the results should be. What is important is what the results really are. Important information can be obtained from any project, even if the results are not what were expected.

8.10.4. Conclusions, Discussion, and Recommendations

Based on the findings obtained, conclusions can be drawn. Such conclusions must always be interpreted and considered within the context established by the study's delimitations and limitations. Often conclusions are made in relation to the research question and/or hypotheses. Alternatively, one can link the conclusions to key findings from the literature review. Either way, the conclusions form the basis for the final evaluation of the project. Once the conclusions are drawn and the effect of the study determined, final recommendations for further work and or research may be made.

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, 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.

8.11. Preparing the Final Thesis

Students must become very familiar with the Purdue Graduate School's Thesis Manual and template even before they begin writing the final thesis. It is good practice for the student and their major professor to confer and agree on an initial outline for their thesis. Furthermore, to make it easier to establish consistency throughout their document, students are advised to also become comfortable with the paragraph heading style and outlining features of their word processor.

NOTE: *Color figures may be used within the thesis.*

NOTE: *If a thesis is greater than 350 pages, it must be separated into two volumes. Consult with the Graduate School for how this is done.*

8.11.1. Final Thesis Contents

The exact structure of a thesis is subject to committee approved adaptations as long as the resulting document still meets the Graduate School's requirements as outlined in the Thesis Manual. The typical thesis consists of five chapters that are supplemented by some preliminary and appendix materials as shown in the outline below:

- Cover Page
- Copyright & Dedication (Optional)
- Acknowledgements
- Table of Contents
- List of Tables
- List of Figures
- Abstract
- Chapter 1: Introduction
    - Statement of the Problem
    - Significance of the Problem
    - Scope of the Study
    - Purpose of the Study
    - Research Question/Hypotheses (if applicable)
    - Definition
    - Assumptions, Limitations & Delimitations
    - Summary
- Chapter 2: Review of the Literature
- Chapter 3: Procedures and Data Collection
  The outline of this chapter is highly variable, but typically it includes sections describing:
    - The methods employed to conduct the study

    - Justification for selection of the chosen methods
    - Instrument and data collection process development and validation
    - Description of the data collection
- Chapter 4: Presentation of Data & Findings
    - The outline of this chapter is highly variable, but typically it includes sections describing:
        - Description of data conditioning and analyses
        - Presentation of the data
        - Discussion as needed
- Chapter 5: Conclusions, Discussion and Recommendations
    - Conclusions
    - Discussion
    - Recommendations
    - Summary
- List of References
- Appendices
- Vita

8.11.2. Chapter 4: Presentation of the Data and Findings

Chapter 4 of the thesis provides a presentation of the data. Typically chapter 4 does not include interpretations or conclusions; it simply presents the facts of what the data say. In quantitative research, this may be elaboration on the results of statistical tests, or the results of tests of an apparatus or new device. In qualitative research, this chapter typically presents the narratives from interviews, raw documents or other artifacts discovered. Interpretation of what the data mean, that is, conclusions made from the data are typically reserved for chapter 5 of the thesis.

8.11.3. Chapter 5: Conclusions, Discussion, and Recommendations

Chapter 5 of the thesis focuses on the conclusions that can be drawn from the data, as well as discussion (where the conclusions are typically tied back or compared to the literature in the field and the existing findings in the field). At the end of this chapter are recommendations; usually this is a discussion of parts of the thesis that could be expanded to form entire studies in their own right. Recommendation may also include things the researcher would have done differently in the current study.

There are different ways to structure chapter 5. Sometimes the writer will take each research question and its associated hypotheses and deal with them in turn (in the conclusions). At other times, other structures can be used. Ultimately, chapter 4 and 5 should be written as dictated by the research, the researcher, and the graduate committee.

> ***NOTE:*** *There are times when a thesis might have more than five chapters. Depending on the scope or breadth of the study, more chapters may be necessary. Typically chapters 1 thru 3 are standardized in the contents they contain. However subsequent chapters vary in title and contents depending on the research being conducted.*

8.11.4. Appendices

The appendices of a thesis are used to provide supporting materials to the work. There is no set number of appendices, nor is there a common structure. Related to structure, appendices are usually ordered in the manner in which they are referenced in the body of the material (and, indeed, all appendices should be referenced in the text body that occurs in the chapters). Some examples of items that might be included in the appendix of a thesis include:

- IRB or other approval documents that establish the ability to conduct the research or conduct it in a legal manor.
- Tests, surveys, or other instruments used in the study (if not copyrighted).
- Examples of code, programs or images used in the study.
- Transcripts of interviews, focus groups or other qualitative data.
- Raw quantitative data gathered during the study.

> ***NOTE:*** *With anything included in the thesis, the writer must insure that they maintain anonymity (where applicable) and do not break copyright agreements (for example, most tests are copyrighted).*

With all of these items, the goal is to provide enough detail in the thesis that someone else could take the thesis and replicate it.

SECTION 9.0. CERTIFICATIONS, PUBLICATIONS & INTEGRITY

The following sections provide information about certifications (FERPA, IRB, CITI, etc.) and resources available at Purdue. Information about research integrity, plagiarism and copyrights conclude this section of the handbook.

9.1. Certifications & Approvals

To be able access student information and to conduct research at Purdue University requires that faculty and students alike be certified in specific ways. Accessing student information requires FERPA certification. To conduct research requires CITI certification and IRB approval (when human subjects are involved). The following sections provide more information about these items.

9.1.1. Family Educational Rights and Privacy Act (FERPA)

To be able to access student information via Purdue's various computer systems (such as myPurdue), faculty and students must be aware of certain legal issues associated with such data. FERPA protects and makes confidential student information beyond basic "directory information" about the student.

> ***NOTE:*** *Purdue University's official FERPA policy is outlined in Executive Memorandum C-51 available at: http://www.purdue.edu/policies/pages/records/c_51.html.*

Purdue University requires that faculty and students who have a justifiable need to access student information be trained and certified. Faculty and students can become FERPA certified by accessing: https://www2.itap.purdue.edu/SSTA/certifications/select.cfm?groupid=1.

9.1.2. Collaborative Institutional Training Initiative (CITI) Certification

The CITI Program is a subscription service providing research ethics education to all members of the research community. Purdue University uses this system to certify faculty and graduate students to conduct research. Of particular importance, researchers involved in the use of human subjects are required to complete the CITI web-based education program in order to be certified as eligible to engage in human subject research at Purdue University. All researchers on an IRB protocol must complete the CITI training before the IRB protocol will be approved**.** To become CITI certified, faculty and students should create an account at https://www.citiprogram.org/ and then go through the required training modules. Graduate students who serve as collaborators on research are also required to pass CITI certification.

9.1.3. Institutional Review Board (IRB) Approval

The IRB is a unit of the Human Research Protection Program (HRPP), which is housed within the Office of Research Administration (ORA), located in room 300 Hovde Hall.

> ***NOTE:*** *The IRB is an extension of the Office of the Vice President for Research (*http://www.purdue.edu/research/vpr/*). Faculty and graduate researchers should become familiar with the wealth of information available on the VPR's web site.*

The IRB website provides detailed steps, forms, and example IRB proposals for all Purdue University faculty and students conducting human subjects research. Researchers need to obtain permission to conduct any studies at Purdue University by submitting IRB proposals and completing certain workshops and online training protocols (see CITI Certification above).

9.2. Resources

The following sections acknowledge important resources provided by various units across campus.

> ***NOTE:*** *The Vice President for Research provides a handbook titled, Research Handbook: A Guide to the Grants Process at Purdue University, located at: http://www.purdue.edu/research/vpr/rschdev/documents/researchhandbook.pdf*

9.2.1. Research Oversight

The Office of the Vice President for Research (VPR) provides much information for faculty and students concerning issues pertaining to research. The VPR provides research oversight concerning Export Control (transport of commodities, software, technical data and certain other information to foreign countries), use of controlled substances for research purposes, use of radiation/lasers, use of biologically hazardous materials, use of animals as well as research involving humans. Faculty and students should be aware of the information available, particular if their research includes any of these or if they are traveling abroad (https://www.purdue.edu/research/vpr/rschadmin/rschoversight.php).

9.2.2. Responsible Conduct of Research (RCR)

The RCR is a joint program between the Graduate School and the Office for the Vice President for Research. This program provides workshops, online training and tutorials, as well as assists in setting policy relative to the conduct of research at Purdue University. More information about the RCR is available at: http://www.gradschool.purdue.edu/RCR/.

9.2.3. Purdue University Psychometric Instruction/Investigation Laboratory (PUPIL)

Purdue University Psychometric Instruction/Investigation Laboratory (PUPIL) Consulting Service, located in BRNG 3157 (phone: 496-3233), is available to respond to and provide resources for questions involving measurement/assessment, psychometrics, and educational and behavioral sciences empirical research. Their web site is located at: http://pupil.education.purdue.edu/.

9.2.4. Statistical Consulting Service (SCS)

The Department of Statistics provides statistical software and design consulting services for the University community – free of charge. The Statistical Consulting Service can help with statistical software problems and data analysis issues. *Statistical Software Consulting* provides assistance with the set up and running of a wide variety of statistical computing programs, including SAS, SPSS, Minitab and S-Plus. Software consulting is available in MATH G175 on a drop-in basis. *Experimental Design and Data Analysis Consulting* is available during the Fall, Spring and Summer semesters. Services include assistance with all phases of research projects: proposal preparation, design of studies, survey design, data input strategies, data import/export, analysis of data, interpretation of results, presentation of results, and other statistics or probability problems. More information is available at: http://www.stat.purdue.edu/scs/.

9.2.5. Center for Instructional Excellence (CIE)

The CIE provides valuable teaching resources (and teaching scholarship resources) to faculty. Graduate student TAs can obtain various certificates by completing a series of free workshops and seminars. The certificates include: Graduate Teaching Certificate (GTC), Graduate Teacher Certificate Alternative, Advanced Graduate Teacher Certificate (AGTC), Preparing Future Faculty Program (PFFP), and the Graduate Teacher Technology Certificate (GT2C). In addition, the website provides teaching tips, teaching consultation, and information about instructional data processing (e.g., test scoring and page scanning services). More information is available at: http://www.cie.purdue.edu/.

9.2.6. Sponsored Programs Services (SPS)

SPS assists Purdue's faculty, staff, and students in securing and managing sponsored program support, and in delivering maximum public benefit from sponsored projects. SPS manages the process of proposal submission, award management, reporting and various contracts that may result from a sponsored award. For more information about SPS and their services, see http://www.purdue.edu/sps/.

9.2.7. Discovery Park

Discovery Park, located adjacent to campus, is a collection of large-scale centers that lead Purdue's interdisciplinary research efforts. Some of these centers include Bindley Bioscience Center, Birck Nanotechnology Center and Burton D. Morgan Center for Entrepreneurship. There are various ways in which graduate students can engage Discovery Park. For more information, see http://www.purdue.edu/dp/.

9.2.8. Purdue Research Foundation (PRF)

PRF is a nonprofit foundation that 1) manages gifts, bequests and endowments; 2) makes funding available to faculty, staff and students to aid in scientific investigation, research or educational studies; 3) acquires, constructs and improves Purdue's facilities, grounds and equipment; and 4) manages intellectual property developed at Purdue. More information about PRF is available at: http://www.prf.org/.

9.2.8.1. PRF Research Parks

The Purdue Research Parks are the result of Purdue University's commitment to

spur economic growth in Indiana's high-tech sector. Under development since the late '90s by the Purdue Research Foundation, a private, nonprofit foundation created to assist Purdue, the parks are focused on companies operating in the arenas of life sciences, homeland security, engineering, advanced manufacturing and information technology. More information about the PRF Research Parks is available at: http://www.purdueresearchpark.com/about/.

9.2.8.2. Office of Technology Commercialization (OTC)

The Purdue Research Foundation's Office of Technology Commercialization (OTC) operates one of the most comprehensive technology transfer programs among leading research universities in the United States. Services provided by this office support the economic development initiatives of Purdue University and benefit the university's academic activities.

Purdue's intellectual property is an asset that Purdue strives hard to protect, market and license. OTC works hand-in-hand with Purdue faculty-, staff- and student-entrepreneurs to provide the resources needed to better understand Purdue policies related to intellectual property and the processes whereby this intellectual property (patents, copyright, trademarks, and tangible research property) can become an actual product or service. To ensure the long-term success of the innovations, OTC takes the process one step further – at times – and help Purdue inventors form startup companies complete with investor support and qualified management teams. More information about the OTC is available at: http://www.prf.org/otc/about_otc.asp.

> ***NOTE:*** *All faculty and students should be familiar with Purdue University's policy on intellectual property. See Purdue University's Policy VIII.4.1, Intellectual Property at: http://www.purdue.edu/policies/pages/teach_res_outreach/viii.4.1.htm.*

9.3. Integrity

Purdue University has a tradition of ethical conduct spanning its history. As a land-grant institution, Purdue demonstrates responsiveness to its constituencies and extends to them access to our knowledge resources. We nurture relationships with other partners in education who support our vision or join us to foster common interests. We integrate our mission with our responsibilities. We contribute our knowledge resources impartially in serving our public purposes. As faculty, students, staff, and administrators, we are a community of dedicated learners, scholars, professionals, and practitioners - all contributing our talents to uphold our standards, and improve ourselves and the broader community in which we live and work. Our responsibilities and obligations toward the advancement of learning, discovery, and engagement in the University and in Indiana extend to our nation and the world. Purdue's statement of integrity is meant to provide an overarching declaration that informs specific policies and procedures regarding conduct, enforcement, and accountability. Such policies and procedures either exist in official University documents or will be developed as necessary.

NOTE: *Purdue's Statement of Integrity is available at: http://www.purdue.edu/Purdue/about/integrity_statement.html*

9.3.1. Plagiarism, Falsification, and Fabrication

Purdue University maintains the highest academic and ethical standards research conducted by faculty and graduate students. It is important to note that the university sees the acts of plagiarism, falsification and fabrication as equal as acknowledged by the following university policy on research misconduct:

> "Research misconduct" shall mean, for the purposes of this policy, fabrication, falsification, plagiarism, or other practices that seriously deviate from those that are commonly accepted within the scientific and academic community for proposing, conducting, or reporting research. It does not include honest error or honest differences in interpretations or judgments of data (Excerpt from the *Purdue University Policy on Research Misconduct (VIII.3.1)*).

9.3.1.1. Plagiarism

Plagiarism is serious violation of research conduct and every researcher, faculty and graduate student needs to be conscious of what it is, and how to avoid it. Plagiarism is to steal or pass off the words, ideas, or intellectual product of another as one's own. It is essentially literary theft as it regards works of a written nature. Plagiarism is typically defined as the use of four or more adjacent words from a specific source.

To avoid plagiarism, you must give credit whenever you use:

- Another person's idea, opinion, or theory;
- Any facts, statistics, graphs, drawings—any pieces of information—that are not common knowledge;
- Quotations of another person's actual spoken or written words; or
- Paraphrase of another person's spoken or written words.

9.3.1.2. Strategies for Avoiding Plagiarism

The following are some general strategies to avoid unintended plagiarism:

- Put in quotations everything that comes directly from the text, **especially when taking notes**.
- Paraphrase, but be sure you are not just rearranging or replacing a few words (which is conscious plagiarism). Instead, read over what you want to paraphrase carefully; cover up the text with your hand, or close the original source so you can't see any of it (and so aren't tempted to use the text as a "guide"). Write out the idea in your own words without peeking.
- Check your paraphrase against the original text to be sure you have not accidentally used the same phrases or words, and that the information is accurate.

9.3.1.3. Guidelines for Quoting and Citing

The following are some guidelines that can be used for determining when to quote and when to cite material from other sources:

- If paraphrasing or writing about the ideas presented by another, citation is necessary (Smith, 2008).
- If using four or more words (even with "permission to use"), quotation and citation is necessary. Quotations over 40 words long should be "blockquoted" as per APA format specifications.
- All quotations require a page number following the quotation or integrated into the citation.
- **If you are in doubt how to give credit, quote and cite the source.**

9.3.2. Self-checking for Plagiarism

To assist Purdue faculty and students, the Graduate School, in partnership with the Office of the Vice President for Research, has initiated this voluntary self check service called *iThenticate*. The software checks submitted documents against thousands of articles that are published in journals and conference proceedings as well as text that appears on the Web. A similarity report is generated that highlights excerpts in the submitted document that match similar text in documents found in print and on the Web. Similarity reports can be helpful in detecting occurrences of inadvertent replication and neglect in referencing.

9.3.2.1. Rules Governing Usage

iThenticate is expressly for use as a tool for checking documents before submission to committees, journals, publishers, and archives, to help students and faculty prevent incidences of unintended plagiarism. The service is free for Purdue faculty and is only for individual use.

Use of the service by students is limited to individual work authored or co-authored by the student for the purpose of screening for potential plagiarism violations prior to submission. The screening service is not to be used for checking the work of others; screening articles of any kind previously submitted for publication; or screening documents of any kind previously submitted for deposit with the Graduate School, for review by an academic committee, or for archiving within the University.

Since the report generated by *iThenticate* only provides citations of language similarity, judgment on the part of the student is often necessary as to whether the submitted text is substantively different from similar text found in the literature. Students are encouraged to seek assistance from their advisors and to consult the Graduate School resources— http://www.gradschool.purdue.edu/RCR/.

9.3.2.2. Procedure for iThenticate

It is the goal of the university to grant all faculty at Purdue the ability to use the *iThenticate* system. Students do not have direct access to the system. For students to gain

access to the system, they must contact a faculty member who has access. However faculty can process documents on behalf of students and then provide the results.

Most CoT faculty have access to the *iThenticate* system. If you have a document you would like to have analyzed, contact your advisor and/or chair and she or he can submit it on your behalf, and provide the results to you. You may also request that the CoT Thesis Format Advisor process your document as well. Please note that as part of the Thesis Format Advising Process, all graduate students will have their thesis analyzed in the *iThenticate* system.

> ***NOTE:*** *The iThenticate system accepts the following file formats: Microsoft Word, searchable pdf, LaTex, postscript, and plain text. Scanned documents converted to pdf or encapsulated in Word or LaTex are not acceptable.* ***Also note that you should delete all images from your file before submitting it for processing (so as to reduce file size).***

9.3.3. Copyright Issues with Figures

Figures and images included in a publication can pose significant issues for authors. Generally, any figure that is directly from another source, such as a journal, book, or other publication (including web publications) are copyrighted. Including them within one's publication requires more than just a citation if used directly from the source. If you desire to use an image from another publication or from an online source, the safest course of action is to secure a release to do so. Otherwise, it could be classified as copyright infringement. A secondary method, albeit in certain cases it could still be considered copyright infringement, is to redraw the image. However, in many cases, redrawing or recreating the image is not enough to ensure it is still not a copyright infringement.

A release to use an image can vary from a specific legal document to a simple email. The key element of a release is that the "copyright holder" gives you permission to use the image for your purposes. Yet, determining who the copyright holder is can sometimes be quite difficult. And, often authors do not fully understand what rights they have.

If you want to use an image, the first course of action is to email the author of the source from which the image is being taken. A release from an author needs to include two things:

1. That the author has the right to grant use of the image.
2. That he or she gives permission for the image to be used for your specific purposes.

It is always a good idea, even if an author gives permission, to follow up with the publisher of the source from which the image is taken and ensure a release is not also needed from the publisher.

As with issues of plagiarism, copyright infringement issues resulting from the illegal use of images is a serious matter. The author should do everything in his or her power to ensure the legitimacy of the use of materials in his or her publications. It is safer to not include an image if you cannot secure appropriate permissions than run the risk of copyright infringement.

SECTION 10.0. POST-PROJECT/THESIS ACTIVITIES

The following section outlines the specific tasks and activities that occur once the student has executed and documented her or his thesis or directed project.

10.1. Appointment of the Examining Committee & Scheduling the Final Oral Examination (Directed Project/Thesis Defense)

The examining committee will usually be the same as the student's advisory committee. The major professor and student are jointly responsible for finding a common date, time, and period when all advisory committee members can meet for the final examination and this must occur within the deadlines established by the Graduate School. The graduate student is expected to take initiative to begin this procedure in conjunction with the availability of the chair and graduate committee. Typically the Graduate Coordinator in the College of Technology will find appropriate facilities for the meeting. The date, time, period and facilities for the meeting are to be transmitted to the College of Technology Graduate Studies Office by the student. COT Form 1 (directed project) and GS Form 8 (Thesis) are available on the Technology graduate program web page. Thye are used to officially schedule the meeting. **These forms are required to be submitted two weeks in advance of the final defense (see Appendix J and K for example forms).**

Following the notice of final examination date, the Graduate Coordinator in the College of Technology will schedule an appropriate meeting room (equipment other than standard equipment offered by Purdue is the responsibility of the student to arrange) and prepare the necessary forms (COT Form 1 or GS Form 8).

The day prior to the final examination date, the Graduate Coordinator in the College of Technology will forward a file of relevant student records, including Graduate School Form 7, Report of the Examining Committee, and candidate audit forms to the major professor (see Appendix L for an example of the Form 7). Following the oral defense, it is the major professor's responsibility to obtain all required committee member signatures and return the signed form to the Graduate Coordinator in the College of Technology in advance of the established deadlines.

10.2. Declaring Graduation Candidacy

In the semester that a student intends on defending their thesis or directed project, she or he must declare candidacy as they register for classes. A Form 23 Registration Form is used to declare graduation candidacy (see Appendix M). Online self-registration is not permitted to declare candidacy. Take the completed Form 23 to the Graduate Coordinator in the College of Technology, Room 463, Knoy Hall for processing prior to the posted deadline.

> ***NOTE:*** *In order to be eligible to graduate, an approved Plan of Study must be on file with the Graduate School before the start of the final semester (see Graduation Deadlines Calendar on the Graduate School web page for the deadlines).*

10.3 Completing the XXX 598 or XXX 698 Requirement

At the conclusion of the final oral examination, the major professor and each member of the examining committee will sign the Graduate School Form 7, Report of the Examining Committee form; the major professor will forward the form to the Office of Graduate Studies for processing (see Appendix L).

> ***NOTE:*** *The Graduate School permits NO EXCEPTIONS to its published deadlines. If all degree requirements are not met in the semester in which candidacy is declared, the student must register for one (1) semester hour of XXX 598 or XXX 698 each subsequent semester until all requirements are met.*

If any problems or deficiencies in the report are indicated by the examining committee, these must be corrected before the project or report will be approved by each committee member. In order for graduation to occur during any semester, completion of all required edits/corrections must occur and be approved before the established deadlines.

The last step involves submitting a copy of the approved project report to each of the following: University (if thesis), College, and Graduate Committee. Sections 10.5, 10.6 and 10.7 cover each of these in detail.

10.4. Formatting Review for Theses

Students are required to meet with the CoT Thesis Format Advisor **at least two weeks** before they defend their thesis. The last date to meet with the CoT Thesis Advisor for a thesis formatting appointment is two weeks prior to the last day to defend the thesis. A thesis formatting appointment is mandatory. If you do not meet with the CoT Thesis Advisor and get the appropriate approval signature on the Form 9 (see Appendix N), you **will not graduate** on time.

The Thesis Formatting Review requires the following steps:

1. Scheduling the meeting via the CoT Graduate Coordinator.
2. Submitting an electronic copy of the thesis via email to the CoT Thesis Advisor two days prior to the review meeting for submission to the *iThenticate* plagiarism checking software.
3. Attending the Thesis Formatting Review meeting.

Note that the Thesis Format Review does not apply to directed projects. Only theses are reviewed for format requirements.

10.4.1. Formatting

For theses, the CoT has adopted the APA, parenthetical citation format as implemented by the university.

10.4.2. Formatting Your Thesis

TECH 646 (a required course for most students) assists the student in developing their proposal and therefore covers how to format the thesis or dissertation. If you are not required to take that course, the following provides some guidelines you should follow to ensure your thesis or dissertation are acceptably formatted.

Foremost, students should use the University Microsoft Word thesis template which is available on the graduate school's web site (http://www.gradschool.purdue.edu/thesis.cfm). This template has styles included within it to make formatting less cumbersome. The Graduate School also holds seminars on use of the template and following the formatting requirements.

> ***NOTE: If your thesis or directed project will include many formulas, you may want to use Latex rather than Microsoft Word. If you use Latex, use the Latex template that is located on the College of Technology web site (NOT the one on the university Graduate School web page).***

Note that there are a few things that the template will not do. Even when using the thesis template, students must:

1. Ensure that they do not use vertical lines in tables.
2. Properly format captions for tables and figures (including proper italics for each).
3. Ensure proper tabs for each paragraph and proper hanging indents on references.

Other specifics of the format can be seen in an example document that can be used as a guide for formatting theses and dissertations (http://www.tech.purdue.edu/cgt/academics/graduate/mohler_dissertation.pdf).

10.4.3. Scheduling Formatting Appointment

To make a thesis formatting appointment with the CoT Thesis Advisor you will need to email the CoT Graduate Coordinator. Once your thesis has been approved, you may schedule your defense. It is recommended that you make your appointment early.

10.4.4. Providing an iThenticate Copy

Two days prior to your scheduled Thesis Advising appointment, you should email the CoT Thesis Advisor a complete copy of your thesis as a single Word or PDF document.

> ***NOTE:*** *If your document contains a large number of images, the images should be deleted from the file before providing it to the Thesis Advisor.*

After receiving your document, the CoT Thesis Advisor will submit your electronic document to the *iThenticate* application to verify there is no plagiarism within the document (see Section 9.3.2). At the Thesis Format Advising appointment you will be able to review the results of the plagiarism check as well as receive the electronic results.

NOTE: *You should bring a USB drive or other storage media with you to the Thesis Advising appointment so that you may receive a copy of the iThenticate results.*

10.4.5. Attending the Formatting Appointment

When a student goes to the format meeting, she or he should bring:

1. A 100% complete, unbound printed copy of the thesis.
2. A digital copy on a USB drive.
3. At least one copy of the GS Form 9 for CoT Thesis Format Advisor to sign.

NOTE: *It is advised that students have multiple copies of the GS Form 9 for the committee to sign (see section 10.7). Only one copy is required (for university deposit, see section 10.5).*

10.4.6. Thesis Pre-review

If a student is in doubt whether their document is formatted correctly, they may email a sample from their thesis to the CoT Thesis Format Advisor for review and comment. "Pre-review" meetings are also a possibility but must occur before the sixth (6th) week of each semester.

10.5. The Oral Defense of the Thesis or Directed Project

Once the format review meeting is completed, the student prepares for their final oral defense. At most oral defense meetings, the student conducts a 20 to 30 minute presentation and then the faculty committee is allowed to ask questions. If time permits, guests in the audience may also ask questions, but this is at the discretion of the chair. Students should discuss the final defense meeting with her or his chair in advance to verify the method by which the chair will conduct the meeting.

NOTE: *The proposal defense and the final defense of the thesis or directed project CANNOT occur in the same semester. The final defense meeting must be scheduled two (2) weeks in advance of the date of the defense. The final thesis or directed project (or respective proposal) must also be provided to the committee two (2) weeks in advance of the date of its defense.*

In addition to presenting and answering questions relative to the direct project or thesis, the student will need to prepare and bring to the final defense the GS Form 9, GS Form 19 and GS Form 20. It is advised that students have multiple copies of the GS Form 9 for the committee to sign (see section 10.7). Only one copy is required (for university deposit; see section 10.5).

10.6 University Deposit of the Thesis

Following successful defense of a thesis, students must deposit their thesis with the Graduate School. The deposit meeting is a face-to-face meeting in which the graduate

student provides an electronic copy of their thesis, as well as the following completed and signed forms:

- GS Form 9: Thesis Acceptance (see Appendix N)
- GS Form 9 ETD: Electronic Thesis Deposit (see Appendix O)
- GS Form 19: Masters Thesis Agreement (see Appendix P)
- GS Form 20: Research Integrity and Copyright Disclaimer (see Appendix H)

> ***NOTE:*** *As of spring 2011, the Graduate School no longer requires forms to be printed on 100% cotton paper.*
>
> ***NOTE:*** *The graduate chair or the student may desire to hold the thesis in confidentiality status for a certain period of time. Both graduate chair and student must agree on confidentiality status. GS Form 15: Request for Confidentiality should be filed at the time of deposit if confidentiality is desired (see Appendix Q for an example of the form).*

Please note that the Graduate School no longer schedules precheck appointments. These have been replaced by the online tools available on the Graduate School's website as well as scheduled presentations to departments, organizations, and interested groups.

To schedule a final deposit appointment, please contact Mark Jaeger at 494-2600/markj@purdue.edu or Anita Park at 494-2600/apark@purdue.edu in the Graduate School.

> ***NOTE:*** *The Graduate School provides a Thesis Deposit Checklist that all students should refer to: http://www.gradschool.purdue.edu/downloads/thesis/ThesisDepositChecklist.pdf.*

10.7. College Deposit of the Thesis or Directed Project

The College of Technology no longer requires a printed and bound copy of the thesis or directed project. The College now requires a digital copy for the College of Technology be submitted electronically to the Purdue e-Pubs site. M.S. thesis students will still electronically deposit their thesis with the Graduate School as required, but will now also submit a digital copy for the college to the Purdue e-Pubs site (http://docs.lib.purdue.edu/tech/).

10.7.1. For Directed Projects

One copy of the completed and signed Report Cover Page of the directed project (see Appendix F) must be delivered to the CoT Graduate Office in Knoy 463 (refer to the Directed Project Deadlines Calendar at http://www.tech.purdue.edu/Graduate/Graduation-Candidates.cfm). **The signed Report Cover Page will not be accepted until an electronic copy of the directed project has been submitted to the College of Technology Purdue e-Pubs site.**

10.7.2. For Theses

The final signature on the GS Form 9 (see Appendix N) will be the Head of the Graduate Program. Please see the CoT Graduate Program Coordinator in Knoy 463 to obtain the appropriate signature on the Form 9**.** After depositing your thesis electronically with the Graduate School, you will then submit the college copy electronically at the College of Technology Purdue Libraries e-Pubs site.

10.7.3. For Assistance with Submitting to the Purdue e-Pubs Site

A help document for submitting to the Purdue University e-Pubs site is located at: http://www.tech.purdue.edu/Graduate/documents/epubsInst.pdf.

10.8. Copies of Final Thesis or Directed Project for Graduate Committee

After depositing your thesis or directed project with the e-Pub site, it is common practice to provide a copy to each of your committee members. Most faculty prefer a traditionally printed and bound copy of the project, whereas others might prefer a digital/electronic copy. Confer with your chair to determine which he or she prefers. Typically whatever is done for the chair is also done for the rest of the committee. If your chair requests a bound copy, The Purdue University Boiler Copy Center can assist you. Typically faculty request a "case (book) bound" copy. More information about this may be found at: http://www.purdue.edu/printingservices/.

10.9. Additional Requirements for Graduation

Additional items that M.S. students must complete for graduation include:

- *Graduate School Survey.* All students must complete the Graduate School Exit Survey if they wish to graduate. Students typically receive an email and/or notification in the *myPurdue* system that details how they complete this requirement.
- *Optional Copyright Fee.* If students would like their thesis to be officially registered with the U.S. Copyright Office, they may pay an additional $65 fee.

10.10. Participating in Commencement

All graduating students are encouraged to participate in the university's commencement ceremonies. This is a time justifiably used to reflect on your accomplishments with pride and to share in the success of others, including the faculty, as well. Information pertaining to commencement (dates, attire, etc.) is available via: http://www.purdue.edu/registrar/.

SECTION 11.0. OVERALL MASTER'S DEGREE PROCEDURAL CHECKLIST

To help students progress through their degree requirements, the following checklist will help map a path through the College of Technology's Master of Science program. Specific and official deadlines are announced each semester, posted on the CoT Graduate webpage and are also available from the College's Graduate Office. Table 11.1 shows a helpful chart for the M.S. thesis, while Table 11.2 shows a chart for the M.S. directed project.

Table 11.1. *CGT M.S. Thesis Timetable*

Semester	**End of the 1st**	**End of the 2nd**	**End of the 3rd**	**End of the 4th**
Coursework		Complete IT 507	Complete TECH 646 Complete TECH 698 (1-3 credits)	Finish Coursework Complete TECH 698 (5-3 credits)
Advisor / Committee	Work with advisor on research area and possible committee members	Establish committee	Schedule/attend thesis proposal defense meeting	Schedule/attend thesis defense meeting
Electronic Plan of Study	Create/File draft EPOS	File Official EPOS	File EPOS Changes (as necessary)	File EPOS Changes (as necessary)
Thesis	Attend another student's thesis defense	Generate research idea	Thesis Proposal Defense (Chapters 1 – 3 complete) IRB or other required approvals	CoT Thesis Advising Appt. Final Thesis Defense GS Thesis Deposit Appt CoT Thesis Deposit (e-Pubs) Committee Deposit
Graduation requirements				CoT Publication req. CoT Exit Survey GS Exit Survey Cap and Gown Order Attend Graduation

Table 11.2. *CGT M.S. Directed Project Timetable*

Semester	End of the 1st	End of the 2nd	End of the 3rd	End of the 4th
Coursework		Complete IT 507	Complete TECH 646 Complete TECH 598 (1 credit)	Finish Coursework Complete TECH 598 (2 credits)
Advisor / Committee	Work with advisor on research area and possible committee members	Establish committee	Schedule/attend thesis proposal defense meeting	Schedule/attend thesis defense meeting
Electronic Plan of Study	Create/File draft EPOS	File Official EPOS	File EPOS Changes (as necessary)	File EPOS Changes (as necessary)
Thesis	Attend another student's thesis defense	Generate research idea	Thesis Proposal Defense (Sections 1 – 3 complete) IRB or other required approvals	Final Thesis Defense
Graduation requirements				CoT Publication req. CoT Exit Survey GS Exit Survey CoT Thesis Deposit (e-Pubs) Committee Deposit Cap and Gown Order Attend Graduation

11.1. First Semester

1. If the transcripts submitted with the application for admission were not complete, arrange to have two (2) copies of the final transcript showing receipt of the baccalaureate (Bachelor's) degree sent to the Associate Dean for Graduate Studies, College of Technology, 401 N. Grant St., Purdue University, West Lafayette, IN 47907-2021.

With the help of the major professor:

2. Discuss your career and educational objectives and, within the framework of the College of Technology master's degree, draft a preliminary plan of study. Review the optional Areas of Concentration as you work.
3. Select a master's committee consisting of your Major Professor and at least two graduate faculty members. At least two of your committee members must be regular, College of Technology graduate faculty. You may select one or more additional faculty to serve on your master's Committee and in some cases this is clearly advantageous (see section 4.2 and 4.3 of this handbook).
4. Discuss the preliminary plan of study with each of the members of the advisory committee (see section 5.0 of this handbook).
5. Using the Electronic Plan of Study (EPOS) system, submit your draft plan of study to your committee members and the College of Technology Graduate Office (see section 5.0 of this handbook).
6. Refine the plan of study, if needed, based on the committee's suggestions.

7. Using the Electronic Plan of Study (EPOS) system, submit your final plan of study to your committee members and the College of Technology Graduate Office (see section 5.0 of this handbook).
8. Identify a tentative directed project problem area.
9. Register for classes for the next semester following approval of the plan of study (see Section 4.5 of this handbook).

11.2. Succeeding Semesters

1. Register for classes as appropriate for the next semester (see Section 4.5 of this handbook).
2. Register for TECH 646 (during your second or third semester) and begin planning for your directed project or thesis (see section 8.6 of this handbook).
3. During your third semester at the latest, register for one (1) semester hour of XXX 598 or XXX 698 and begin work on the directed project or thesis proposals (see section 8.1 and 8.2 of this handbook).
4. Schedule a defense meeting for the directed project or thesis proposal (at least two weeks in advance of the meeting). All committee members must be present. Once the committee has approved the proposal, submit the proposal to the CoT Graduate Studies office with the completed CoT Form 2: Acceptance of Graduate Proposal (see section 8.5 of this handbook).
5. After the proposal is approved, begin work on the directed project (2 semester hours of XXX 598, to complete the actual directed project) or thesis (5 semester hours of XXX 698, to complete the actual thesis). (See sections 8.1, 8.2, and 10.3 of this handbook).

11.3. Final Semester

1. Register for any remaining courses on the plan of study (see section 4.5 of this handbook).
2. Insure that any changes in your plan of study have been approved using the Change process within the electronic plan of study generator, located on *myPurdue* (see section 5.0 of this handbook).
3. Check the "Candidate" space on the Form 23 Course Request Form when registering for the semester in which graduation is expected. You must have the Graduate Coordinator enter the candidate information into the *myPurdue* system (see section 10.2 of this handbook).
4. Register for at least one (1) semester hour of XXX 598 or XXX 698 (or the remaining number of hours to bring your total research hours to the minimum required). (See section 10.3 of this handbook).
5. Using the CoT Form 1: Request to Schedule Oral Exam Form, directed project students arrange the scheduling of the final oral examination at least three weeks prior to the exam date. Thesis students must submit a Request for Examining Committee (GS Form 8) no less than two weeks prior to the exam date (see Appendix J & K for examples of the forms; see section 10.1 of this handbook).

6. If a thesis student, schedule Thesis Format Advising meeting with the CoT Thesis Advisor to occur two weeks prior to the final oral examination via the CoT Graduate Coordinator (see section 10.4 of this handbook).
7. If a thesis student, schedule University deposit meeting with Mark Jaeger in the Graduate School (see section 10.6 of this handbook).
8. Satisfy the final oral examination requirement and make any revisions to the thesis or directed project that are required by your committee (see section 10.5 of this handbook).
9. Submit a final copy of your thesis or directed project to the Purdue Library e-Pubs section prior to the deadline established by the CoT Graduate Studies office (see section 10.7 of this handbook).
10. Provide final copies of your thesis or directed project to your chair and graduate committee (see section 10.8 of this handbook).

APPENDIX A:

REQUEST FOR REDUCED COURSE LOAD

(available at http://www.iss.purdue.edu/)

Reduced Course Load (RCL) Request Form

****Do not register for a course load (or drop a course) that will place you in RCL status without first obtaining DSO (Designated School Official) permission. RCL approval may be obtained by completing Sections I & II of this form and then meeting with a DSO in the Office of International Students and Scholars (ISS).**

RCL Definition:

- Less than 12 credits hours for international undergraduate students
- Less than 8 credit hours for international graduate and professional students without a graduate staff appointment or employment-based fellowship
- Less than 6 credit hours for international graduate and professional students with a graduate staff appointment or employment-based fellowship

Exception: Students who engage in full-time Curricular Practical Training (CPT), full-time optional practical training (OPT) or academic training (AT) are not required to be registered full-time and do not need to complete this form.

SECTION I: Student Use Only

Complete items 1 - 5 below and then submit this form to your Academic Advisor (undergraduate students) or Chair of Departmental Graduate Committee (graduate/professional students) to complete Section II.

1. **Name**:_____

2. **PUID:_____ (10 digit PUID Number)**

3. **Semester for which RCL is Requested**: ___Spring ___Summer ___Fall Year 20____

4. **Reason for RCL Request:**

_____ Medical (must include a letter from a medical professional recommending reduced course load)

_____ Improper course placement

_____ Initial English language difficulties

_____ Initial unfamiliarity with American teaching methods

_____ Last semester of a student's academic program (Graduate level students only who will complete all degree requirements during the requested RCL semester need to apply. Undergraduate students can enroll part-time their last semester and do not need to process an RCL form.)

5. **Student Explanation** (attach additional typed sheet, if needed):_____
_____
_____
_____

Section II: Undergraduate Academic Advisor or Chair of Departmental Graduate Committee.

Please mark accordingly: ____ Undergraduate ____Graduate (Non-Thesis) ____Graduate (Thesis)

Recommendation: ___ Recommend approval ___ Do not recommend approval

REASON: (Provide justification for decision based upon a reason listed above in Section I, #4)
_____
_____
_____
_____
_____

Recommended by: (Printed Name)_____

Signature: _____ **Date:** _____

Title: _____ **Dept.**_____

****Students must bring this form to ISS for approval before taking a reduced course load (RCL).**

2/8/2010

APPENDIX B:

SAMPLE PLAN OF STUDY

(available via the Electronic Plan of Study Generator on myPurdue)

Graduate Plan of Study

Status	**APPROVED**	**Submitted 05/18/2005**
Student	DOE, JOHN A.	123456789
Student Email	doej@tech.purdue.edu	
Department	TECHNOLOGY	TECH
Degree Title	MASTER OF SCIENCE : NON-THESIS	21
Date Degree Expected	May 2006	
Area of Specialization	HUMAN FACTORS	000
Research Area	AVIATION HUMAN FACTORS	

Supplemental Notes: **Add A Supplemental Note** **View All Notes**

Subject	Type	Author	Date Added
	PUBLIC		06/08/2005
	PUBLIC		09/19/2005

Items in purple are completed. / Items in green are incomplete.
Courses: ** Grades posted here are as of the end of the semester that they were taken. Late grade changes or title changes may not be reflected. If you see a discrepancy, contact the Graduate School.

Area	Courses Title	Subj. Abbr.	Course No.	Credit Hours	Regis. Type	Grade	B or better	Transfer From	Date Completed To Be Completed
PRIMARY	MEASUREMENT AND EVALUATION IN INDUSTRY	IT	50700	3	RE		-	-	May 2004
PRIMARY	QUAL & PROD IND & TECH	AT	50800	3	RE		-	-	Dec 2005
PRIMARY	MANAG RISK OF ORG ACCI	AT	57300	3	RE		-	-	Dec 2004
PRIMARY	APPLIED RESEARCH PRACT	AT	58100	3	RE		-	-	Aug 2005
PRIMARY	SOLV IND PROB APPL RES	AT	58100	3	RE		-	-	Dec 2004
PRIMARY	ANALYSIS OF RESEARCH IN INDUSTRY AND TEC	TECH	64600	3	RE		-	-	May 2004
RELATED	HUMAN ERROR	AT	57200	3	RE		-	-	Dec 2003
RELATED	BIOMETRICS TECH&APPLIC	IT	58100	3	RE		-	-	May 2004
RELATED	HUMAN FACTORS ISSUES	AT	59000	2	RE		-	-	Dec 2003
RELATED	HUMAN FACTORS IN AVIATION	AT	59000	2	RE		-	-	Dec 2004
RELATED	SAFETY ASSESSMENT	AT	59000	2	RE		-	-	Aug 2003

Purdue graduate course tallies:
Purdue POS GPA: 4
Purdue Primary Area Credit Hours : 18
Purdue Related Area Credit Hours : 12
Purdue Area Not Specified Credit Hours: 0

Language Requirement : None

Comments Regarding Exceptions or Requirements: None

Advisory Committee Information and Approval Status

Level	Names of Advisory Committee Members	Cert	Faculty Identifier	Status	Department Code	Advisor in Area of
50	GARY M. EIFF (CHAIR)	R	C9999	APPROVED by Gary M. Eiff 10/09/2005 15:58:08	T37	TECHNOLOGY
50	DENVER W. LOPP	R	C8888	APPROVED by Denver W. Lopp 10/09/2005 16:01:49	T37	HUMAN FACTORS
50	STEPHEN J. ELLIOTT	R	C7777	APPROVED by Stephen J. Elliott 10/09/2005 13:25:00	T37	TECHNOLOGY

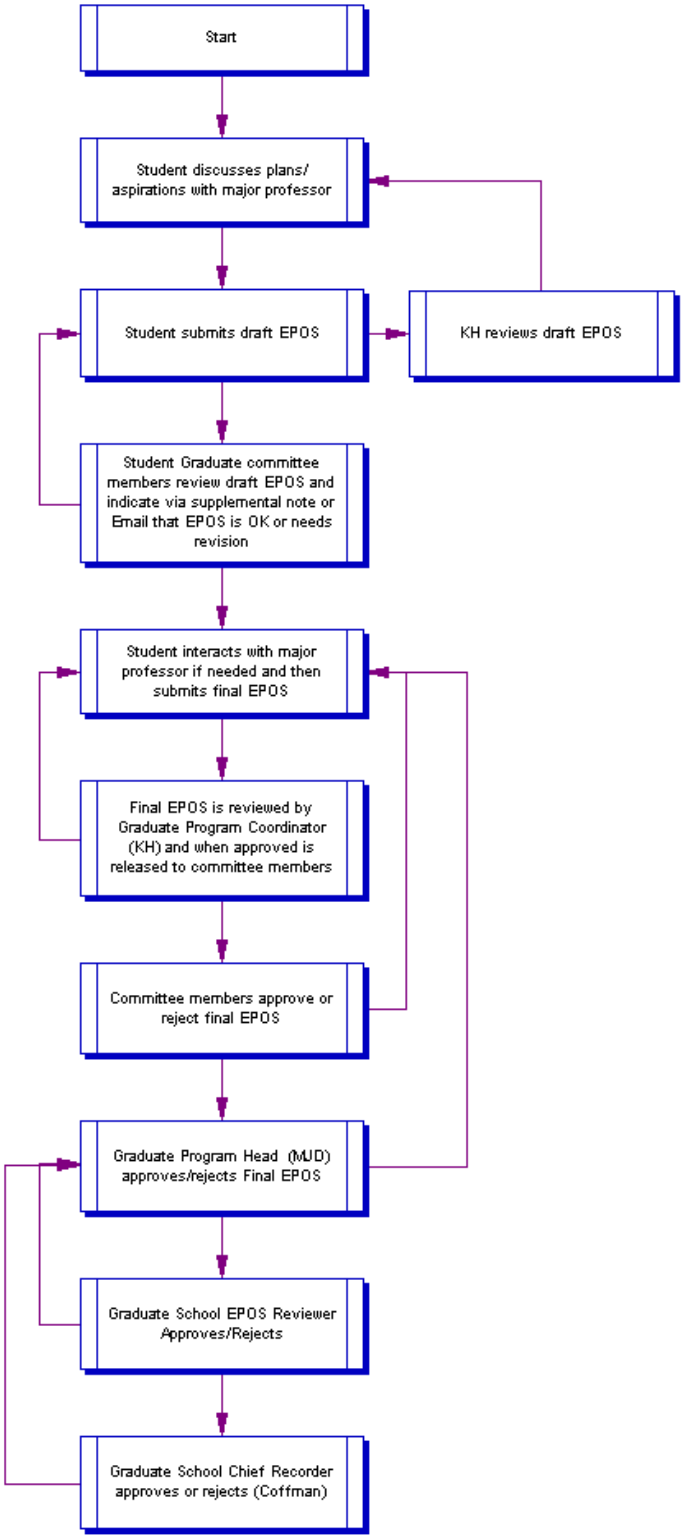
Additional Authorization

Level	Authorization	Required Signature	Status
70	Student	John Doe	SUBMITTED 09/18/2005 11:59:41
60	Plan of Study Coordinator	Debbie Hulsey	APPROVED by Debbie Hulsey 10/09/2005 11:26:39
20	Graduate Program Authorization	Gary Bertoline	APPROVED by Gary Bertoline 10/20/2005 14:17:14
10	Graduate School Authorization	Patricia A. Springer	APPROVED by Patricia A. Springer 10/26/2005 09:20:50
0	Processor	Richard D. Coffman	PROCESSED by Richard D. Coffman 10/27/2005 12:59:18

APPENDIX C:

FLOWCHART OF EPOS PROCESS

EPOS Process



APPENDIX D:

INDEPENDENT STUDY REQUEST FORM AND INSTRUCTIONS

(available at http://www.tech.purdue.edu/Graduate/)

GRADUATE INDEPENDENT STUDY AUTHORIZATION FORM

College of Technology
Purdue University

(**NOTE**: A maximum of 6 hours credit for XXX 59000 is permitted on any plan of study program) (XXX=Dept. prefix)

(Please type or print all information clearly)

Student Name _____ Student I.D. # _____

Classification: Ph.D. M.S. PBR *(Circle one)* Current or previous number of credits of Independent study credit: _____

(circle one)

I hereby request permission to enroll in XXX 59000 for _____ credits during the Fall Spring Summer semester, 20__-20__. I plan to pursue an independent study project of the problem, _____

_____

(Please insert title of course)

I will submit all deliverables by: _____
Date

_____ _____
Student's Signature *Date*

I request that credit apply to: Master's Degree Doctoral Degree Non-degree Study
(Circle one)

I am willing to guide the independent study outlined in the attached prospectus and I agree to the deadlines indicated above.

_____ _____ _____
Professor in Charge of Instruction Signature *Printed Name* *Date*

Enrollment in the above independent study is consistent with the degree objectives of this student and is
☐ on ☐ not on his/her plan of study. This student will not exceed six (6) credit hours of XXX 59000 on his/her plan of study with this enrollment.

_____ _____ _____
Major Advisor's Signature *Printed Name* *Date*

Approved

_____ _____
Department Head Signature *Date*

http://www.tech.purdue.edu/graduate/docsandforms/index.html REV. 07/06

INDEPENDENT STUDY REQUEST INSTRUCTIONS
College of Technology
Purdue University

REQUEST FOR PERMISSION TO ENROLL IN AN INDEPENDENT STUDY COURSE

Procedures

1. Meet with your professor to discuss your proposed study and secure his/her approval for the project you envision.
2. Incorporating your professor's input, prepare a detailed project prospectus (typed or word processed, use APA format, title page), including the following indicated sections.

   a. Problem: Define the rationale and delimit your problem area (explain your interest in pursuing the project, why this area is of concern to you). How does this project relate to your degree objectives?

   b. Purpose and Objectives: What do you hope to accomplish? Provide a physical numbered listing of all objectives you expect to accomplish.

   c. Procedures: Explain the methods you expect to use and any unusual requirements for materials, equipment, or facilities. A graphical time line and two progress reports from the student must be submitted by the student to the professor in charge between weeks three and ten of the semester. Specifically, indicate key deadline dates for each progress report and deliverable. Provide a narrative, flow chart, or outline of step-by-step procedures used to complete this study. If applicable, provide a supply and material cost worksheet.

   d. Outcomes: What will be the tangible results (deliverables, i.e. software source code, papers, reports, products, or summaries) of your study? Who will receive copies (office, professor, co-working professor, and student)? Will you conduct a formal presentation of your results?
3. Meet with your professor in charge to discuss and refine your project prospectus.
4. Revise the prospectus as necessary. Complete the **INDEPENDENT STUDY AUTHORIZATION FORM** (reverse side of this page); attach it to the front of the prospectus; and secure the signatures of your academic advisor and the professor in charge of the independent study course you will be taking.
5. Submit the signed copy of your request to the Graduate Office, Room 150 KNOY. The prospectus must be accompanied by a completed course request (Form 23). A copy of your project -prospectus must be given to the professor in charge. DO NOT submit the Form 23 at the Graduate Office prior to securing the department head's approval for the prospectus. Approval criteria include: 1) total numbers of independent study courses on Plan of Study; and 2) Focus on a College of Technology discipline.
6. The Graduate Secretary will make and distribute copies to appropriate persons and file the original in the departmental office. Make sure to keep a copy for yourself.

Regulations and Restrictions in the Use of Independent Study Courses

1. Independent study may be included in a graduate plan of study only when enrollment is scheduled after the plan of study has been approved. Check with your advisor for other restrictions which may apply to you. Typically, such courses cannot be added to your schedule after the third week of classes.
2. You must submit a copy of your final outcomes (using APA format) for the study to the department head for departmental files, and a copy to the professor in charge before the beginning of finals week. Failure to do so can result in an incomplete or a failing grade.
3. All work submitted must be independent of other course work (previous, existing, or future).

http://www.tech.purdue.edu/graduate/docsandforms/index.html REV. 07/06

APPENDIX E:

COT FORM 2: ACCEPTANCE OF GRADUATE PROPOSAL

(available at http://www.tech.purdue.edu/Graduate/forms_documents.cfm)

COT Grad Studies Form 2
V 1.0

Please type or print clearly
August 2010

College of Technology
Graduate Studies

Acceptance of Graduate Proposal
(To be submitted to Graduate Studies Office Following Proposal Defense Meeting)

Title of Project: _____

_____

_____

Proposal Defense Date: _____ Project Type: ☐ Directed Project ☐ Thesis ☐ Dissertation

_____ _____
Chair Date (month/day/year)

_____ _____
Member Date (month/day/year)

_____ _____
Member Date (month/day/year)

_____ _____
Member Date (month/day/year)

_____ _____
Printed Name and Signature of Candidate Date (month/day/year)

APPENDIX F:

DIRECTED PROJECT COVER PAGE

(available at http://www.tech.purdue.edu/Graduate/forms_documents.cfm)

PURDUE
UNIVERSITY

Purdue University West Lafayette, Indiana

College of Technology

<Title>

In partial fulfillment of the requirements for the
Degree of Master of Science in Technology

A Directed Project Proposal

By

<Your Name Here>

<Date>

Committee Member	Approval Signature	Date
<Name>, Chair	_____	_____
<Name>	_____	_____
<Name>	_____	_____
<Name>	_____	_____

APPENDIX G:

THESIS COVER PAGE

(available at http://www.gradschool.purdue.edu/thesis2.cfm)

PLEASE ENTER TITLE HERE

A Select Type

Submitted to the Faculty

of

Purdue University

by

Your Name

In Partial Fulfillment of the

Requirements for the Degree

of

Master of Science

Select Graduation Month Select Graduation Year

Purdue University

West Lafayette, Indiana

APPENDIX H:

FORM 20: RESEARCH INTEGRITY AND COPYRIGHT DISCLAIMER

(more information available at http://www.gradschool.purdue.edu/thesis3.cfm)

NOTE: This form must be completed and turned in by *all* candidates. Please carefully review the following instructions.

G. S. Form 20, "Research Integrity and Copyright Disclaimer"

This form will be completed by both doctoral and master's candidates and included with their electronic and, if applicable, printed documents. The following procedures apply:

- One (1) copy will be strictly *typed*, converted to Adobe pdf, and then attached as the second page of the electronic thesis document (i.e., following your ETD Form 9 and preceding the thesis title page).
- One (1) copy will be printed on 100% cotton paper and signed. We require "cotton paper" due to permanent archival requirements. You will turn in this form at your final deposit appointment. If you are unable to obtain cotton paper through your department, the Thesis/Dissertation can provide it to you at no charge.
- If your department also requires copies of your thesis, you will need to insert additional copies of the *signed* Form 20 in those as well.

Please ensure you do not include this page when inserting the form into your document! When printing as a pdf, select "current page" and this will avoid your need to delete it afterwards.

Please contact the Graduate School Thesis/Dissertation Office, 494-2600 or markj@purdue.edu if you have questions or need assistance with this form.

Graduate School Form 20
(Revised 1/10)

PURDUE UNIVERSITY
GRADUATE SCHOOL

Research Integrity and Copyright Disclaimer

Title of Thesis/Dissertation:

For the degree of _____

I certify that in the preparation of this thesis, I have observed the provisions of *Purdue University Teaching, Research, and Outreach Policy on Research Misconduct (VIII.3.1)*, October 1, 2008.*

Further, I certify that this work is free of plagiarism and all materials appearing in this thesis/dissertation have been properly quoted and attributed.

I certify that all copyrighted material incorporated into this thesis/dissertation is in compliance with the United States' copyright law and that I have received written permission from the copyright owners for my use of their work, which is beyond the scope of the law. I agree to indemnify and save harmless Purdue University from any and all claims that may be asserted or that may arise from any copyright violation.

_____
Printed Name and Signature of Candidate

_____
Date (month/day/year)

*Located at http://www.purdue.edu/policies/pages/teach_res_outreach/viii_3_1.html

APPENDIX I:

COT FORM 3: RESEARCH INTEGRITY AND COPYRIGHT DISCLAIMER

(available at http://www.tech.purdue.edu/Graduate/forms_documents.cfm)

COT Grad Studies Form 3
V 1.0

Please type or print clearly
August 2010

College of Technology
Graduate Studies

Research Integrity & Copyright Disclaimer
(must be included as page 2 of the Directed Project Report)

Title of Directed Project:

For the degree of

I certify that in the preparation of this directed project, I have observed the provisions of *Purdue University Teaching, Research, and Outreach Policy on Research Misconduct (VIII.3.1)*, October 1, 2008.*

Further, I certify that this work is free of plagiarism and all materials appearing in this directed project have been properly quoted and attributed.

I certify that all copyrighted material incorporated into this directed project is in compliance with the United States' copyright law and that I have received written permission from the copyright owners for my use of their work, which is beyond the scope of the law. I agree to indemnify and save harmless Purdue University from any and all claims that may be asserted or that may arise from any copyright violation.

_____
Printed Name and Signature of Candidate

_____
Date (month/day/year)

APPENDIX J:

COT FORM 1: REQUEST TO SCHEDULE ORAL EXAMINATION

(more information available at http://www.tech.purdue.edu/Graduate/forms_documents.cfm)

COT Grad Studies Form 1

Please type or print clearly

College of Technology
Graduate Studies

Request to Schedule Oral Examination
(Must be filed 3 weeks prior to exam)

Major Advisor:

Graduate Student:

Directed Project Title:

Exam Date:

Exam Start Time:

Exam End Time:

Equipment Required *(check all that apply)*:
- ☐ Overhead Projector
- ☐ Computer Projector
- ☐ Other (*please specify at right*):

Examining Committee Members:

Additional Invited Guests Requested:

Examining Committee Same as Advisory Committee?
☐ Yes ☐ No

Note: It is College of Technology graduate policy that the presentation portion of all final examinations be open to the university faculty and student communities.

Requested By:

_____
Signature, Major Advisor

Grad Faculty Code:

NOTE: ***Please assume this request has not been received by the College of Technology Graduate Office until you receive confirmation.***

CONFIRMATION: (for office use only)
Exam Date: _____ Exam Time: _____
Room: _____ Equipt: _____
Faculty & Student Notified: _____

APPENDIX K:

GS FORM 8: REQUEST FOR APPOINTMENT OF EXAMINING COMMITTEE

(more information available at http://www.gradschool.purdue.edu/faculty/forms.cfm)

Graduate School Form 8
(Revised 2/90)

(Please type)

PURDUE UNIVERSITY
GRADUATE SCHOOL
Request for Appointment of Examining Committee
(Adaptable for any degree)

Name of Student _____ Student ID No. _____

Examination to be taken:

- ☐ Preliminary Examination
- ☐ Final Examination

Degree sought (exact title) _____

It is recommended that the following serve as members of the Examining Committee:

		Graduate Faculty Identifier	Area
_____	Chair	_____	_____
_____		_____	_____
_____		_____	_____
_____		_____	_____
_____		_____	_____

It is planned to hold the examination:

Date _____ Time _____ Building _____ Room No. _____

Thesis Title _____

Recommended by: _____ _____
Major Professor Head of the Graduate Program

Department _____ Dept. Code _____

Date Submitted _____

Graduate School Dean

Submit original plus one copy to the Graduate School

APPENDIX L:

GS FORM 7: REPORT OF MASTER'S EXAMINING COMMITTEE

(more information available at http://www.tech.purdue.edu/Graduate/)

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
☐	☐	_____, Chair	___ ___ ___ ___ ___
☐	☐	_____	___ ___ ___ ___ ___
☐	☐	_____	___ ___ ___ ___ ___
☐	☐	_____	___ ___ ___ ___ ___
☐	☐	_____	___ ___ ___ ___ ___

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.

APPENDIX M:

EXAMPLE FORM 23

OFFICE OF THE REGISTRAR
FORM 23 (10/2008)

SCHEDULE REVISION REQUEST

PURDUE UNIVERSITY

1. PUID 0012345678 2. NAME Smith (LAST) Bill (FIRST) (MIDDLE)

3. TERM Fall 2009 (ex. Fall 2008) 4. COLLEGE Tech 5. MAJOR GR 6. CLASSIFICATION _____

7. CANDIDATE _____YES _____ NO 8. REGISTRATION FOR ☐ EXAM ONLY ☐ DEGREE ONLY

DROP/ADD/MODIFY REQUEST

	A-Add D-Drop M-Modify	CRN	Subject	Course No.	Var. Credit	W/ WF	P/ NP	Instructor/Department Head Signature	Date
1	A	32680	CGT	58100	3				
2	A	36810	Tech	69800	3				
3									
4									
5									
6									
7									
8									
9									
10									

VARIABLE TITLE COURSES

	CRN	Subject	Course No.	Credit	P/NP	Course Title (Limit: 30 Characters)
1	12469	CNIT	59000	3		Surviving Grad School
2						

OVERRIDE REQUEST

	Override Code*	CRN	Subject	Course No.	Instructor/Department Head Signature	Date
1	INSTPERMT	36810	Tech	699	K Duthie Hurley	
2						
3						
4						

***OVERRIDE CODES**

CLASS	Classification Override
CLOSED	Closed Section Override
CO-REQ	Co-req Override
COLLEGE	College Restriction Override
DEGREE	Degree Override
DPT-PERMIT	Department Permission
DUP-CRSE	Duplicate Course
HONORS	Honors Permission
INST-PERMT	Instructor Permission
LEVEL	UG or GR Level Override
MAJOR	Major Restriction Override
PRE-REQ	Pre-req Override
PROGRAM	Program Override
REPEAT	Repeat Limit Override
TIME-CNFLT	Time Conflict Override

COMMENTS

AUTHORIZATIONS

Bill Smith
SIGNATURE OF STUDENT DATE

Gary Bertoline
SIGNATURE OF STUDENT'S ADVISOR OR GRADUATE SCHOOL DATE

Gary Bertoline
PRINTED/TYPED NAME OF STUDENT'S ADVISOR OR GRADUATE SCHOOL

OFFICE USE

ACADEMIC ADVISING OFFICE

APPENDIX N:

GS FORM 9: THESIS ACCEPTANCE

(more information available at http://www.gradschool.purdue.edu/thesis3.cfm)

NOTE: This form *must* be completed and turned in by *all* master's and Ph.D. candidates at their final thesis deposit appointment. Please do not confuse this form with the ETD Form 9, linked elsewhere on this website, which is solely used by *Ph.D.'s* when submitting Electronic Thesis Deposits.

Please carefully read the following instructions and ensure you have properly completed this form and have obtained all required signatures and dates. Failure to do so will cause needless delays in your processing.

G. S. Form 9, "Thesis Acceptance"

The "original" copy of this form *must* be printed on 100% cotton, non-acidic paper *prior* to having it signed by your committee members, major professor, et.al. This is due to the following:

- Ph.D. candidates submitting via Electronic Thesis Deposit must still turn in their *original, signed* "Thesis Acceptance" form at their final deposit appointment. This copy of the form will be permanently maintained on file at the Graduate School. Accordingly, the Graduate School needs an "archival quality" copy of your thesis acceptance form to ensure it remains in good condition, since wood-pulp ("acidic") paper deteriorates and fades with age.

- Ph.D. candidates who prefer to submit their dissertations in traditional "hard copy" form will also need to ensure an original completed and signed copy, printed on 100% cotton paper, is bound into the "deposit copy" they furnish at their final deposit appointment. However, please note that hard copy submissions will no longer be accepted once mandatory Electronic Thesis Deposit for doctoral candidates commences effective 23 August 2007.

- All other copies of your Thesis Acceptance form may be printed on regular copier paper, unless departmental requirements dictate otherwise.

- Candidates unable to immediately obtain 100% cotton paper from their department or workplace may contact the Thesis/Dissertation Office and it will be furnished to them at no charge.

Questions? Please contact the Thesis/Dissertation Office at 6-3157 or at markj@purdue.edu

Graduate School Form 9
(Revised 10/07)

PURDUE UNIVERSITY
GRADUATE SCHOOL
Thesis/Dissertation Acceptance

This is to certify that the thesis/dissertation prepared

By _____

Entitled

For the degree of _____

Is approved by the final examining committee:

_____ _____
Chair

Approved by: _____
Head of the Graduate Program Date

To the best of my knowledge and as understood by the student in the *Research Integrity and Copyright Disclaimer (Graduate School Form 20)*, this thesis/dissertation adheres to the provisions of Purdue University's "Policy on Integrity in Research" and the use of copyrighted material.

_____
Major Professor

This thesis ☐ is ☐ is not to be regarded as confidential.

_____
Major Professor

Format Approved by:

_____ or _____
Chair, Final Examining Committee Department Thesis Format Advisor

APPENDIX O:

GS ETD FORM 9: ELECTRONIC THESIS DEPOSIT

(more information available at http://www.gradschool.purdue.edu/thesis3.cfm)

NOTE: This form will be used by all candidates when submitting Electronic Thesis Deposits. All master's and Ph.D. candidates must still complete and turn in the G. S. Form 9, "Thesis Acceptance" linked elsewhere on this website.

Please carefully read the following instructions!

ETD Form 9, "Thesis Acceptance"

- Ph.D. candidates submitting via Electronic Thesis Deposit must ensure a completed ETD Form 9 is attached to the front of their Adobe pdf document. This form will be typed (not signed) and takes the place of the *original, signed* "Thesis Acceptance" form, which will instead be turned in at your final thesis deposit appointment. The reason this form is typed is to preclude potential fraud resulting from unauthorized availability and use of signatures on the Web.

- Prior to attaching this form to the front of their thesis document, candidates must ensure they first complete and save it on a computer loaded with Adobe Professional, Adobe Standard, or similar pdf conversion/merging software (e.g., PrimoPDF). Doing this ensures their document will be "stabilized," *so it cannot be edited after the fact*. Proper stabilization *cannot* be performed on machines loaded only with Adobe Reader.

- Here is a common method for saving, stabilizing, and inserting a document in Adobe pdf:

  1. After typing in the appropriate information, go to the top and select File>Print.

  2 You will then see a Print dialog box: go to the printer drop-down menu in the upper left-hand corner and then select the "ADOBE PDF" option.

  3. A "Save As" dialog box should then appear: type in your desired file name, as well as *where* you want to save the file, then click "OK." We suggest you select "Current Page" so you will only save the page you actually need.

  4. Your file should then immediately convert to a stabilized Adobe pdf document.

  Once this is accomplished, assuming you have already converted the rest of your thesis document to Adobe pdf, you can then "drop in" your ETD Form 9 as follows:

1. At the top, select Document>Insert Pages.

2. You will then see a "Select File to Insert" dialog box requesting the name of the file you wish to insert. Select the file name for your ETD Form 9 and then click "Select."

3. An "Insert Pages" dialog box will then appear. Select your location as "Before" and your page as "First" and then click "OK." This will insert your stabilized ETD Form 9 into the front of your Adobe pdf document.

- Candidates *may* also be able to simply insert the ETD Form 9 into the front of their MS Word documents, and *then* run everything through the online Adobe pdf converter available at the Purdue ETD website.

- There are undoubtedly several ways to accomplish the above actions, so we encourage feedback from candidates and staff regarding different procedures that work well for them.

- All "hard" copies of your ETD Form 9, intended for your departmental library, committee members, etc. may be printed on regular copier paper, unless departmental requirements dictate otherwise. **Please insert copies of your *original, signed Form 9*: do not use the ETD Form 9 in your departmental copies.**

Questions? Please contact the Thesis/Dissertation Office at 6-3157 or at markj@purdue.edu

PLEASE EITHER USE THE "CURRENT PAGE" PRINT OPTION OR REMOVE THE INSTRUCTION PAGES BEFORE INSERTING THE ETD FORM 9 INTO THE FRONT OF YOUR DOCUMENT!

Graduate School ETD Form 9
(Revised 12/07)

PURDUE UNIVERSITY
GRADUATE SCHOOL
Thesis/Dissertation Acceptance

This is to certify that the thesis/dissertation prepared

By _____

Entitled

For the degree of _____

Is approved by the final examining committee:

_____ _____
Chair

_____ _____

_____ _____

_____ _____

_____ _____

To the best of my knowledge and as understood by the student in the *Research Integrity and Copyright Disclaimer (Graduate School Form 20)*, this thesis/dissertation adheres to the provisions of Purdue University's "Policy on Integrity in Research" and the use of copyrighted material.

Approved by Major Professor(s): _____

_____

Approved by: _____
Head of the Graduate Program Date

APPENDIX P:

GS FORM 19: MASTERS THESIS AGREEMENT

(more information available at http://www.gradschool.purdue.edu/thesis3.cfm)

MEMO PURDUE UNIVERSITY

THE GRADUATE SCHOOL
Office of the Dean

TO: Master's (Thesis Option) Candidate

FROM: Phillip E. Pope, Associate Dean

RE: Master's Thesis Agreement

In accordance with *Purdue University Executive Memorandum B-10,* the copyright ownership of your master's thesis resides with you, the author. In signing the *Purdue University Graduate School Master's Thesis Agreement (G.S. Form 19)*, you give permission to Purdue University to reproduce, distribute, and display, in whole or in part, your master's thesis. Please read the agreement carefully, as it is a binding agreement between you and Purdue University. You have the option to sign the agreement.

The *Master's Thesis Agreement (G.S. Form 19)* is a critical component of your thesis. This form, whether you signed it or not, is to be placed immediately after the *Thesis Acceptance (G.S. Form 9)* and immediately before the blank page. The placement of the original *Master's Thesis Agreement (G.S. Form 19)* results in it being the second page of the bound thesis. In addition, a copy of *G.S. Form 19* should be included in the departmental copy of the thesis.

Thank you for your attention to this important matter.

Attachment

Young Hall, Room 160 ● 302 Wood Street ● West Lafayette, IN 47907-2108
(765) 494-6963 ● Fax: (765) 494-0136 ● ppope@purdue.edu ● www.gradschool.purdue.edu

PLEASE READ PRIOR TO DOWNLOADING!

G. S. Form 19, "Master's Thesis Agreement"

- At least one copy of this form *must* be printed on 100% cotton, non-acidic paper *prior* to completing it (your signature is *optional* but is strongly recommended). The Graduate School requires an "archival quality" copy of your Master's Thesis Agreement form to ensure it remains in good condition, since wood-pulp ("acidic") paper deteriorates ("browns and crumbles") with age.

- Once you have completed your 100% cotton copy of this form please ensure, as stated in current procedures, it is bound into the 100% cotton "deposit copy" of your thesis you are required to submit at your final deposit appointment. This copy will, in turn, be permanently shelved at the Purdue Libraries Repository.

- All other copies of your Master's Thesis Agreement form may be printed on regular copier paper, unless departmental requirements dictate otherwise.

- Candidates unable to immediately obtain 100% cotton paper from their department or workplace may contact the Thesis/Dissertation Office and it will be furnished to them at no charge.

Questions? Please contact the Thesis/Dissertation Office at 6-3157 or at markj@purdue.edu

Graduate School Form 19
(9/01)

PURDUE UNIVERSITY
GRADUATE SCHOOL
Master's Thesis Agreement

Author Your name, as it appears in University records.

Thesis Title Type your complete thesis title here. If you need more than one line, tab to next line.

This information goes on the second line of your thesis. Ensure your first line is not cut off.

Department Type in the full name of your school or department.

Major Professor Type the name of your major professor(s) as they appear in your thesis abstract.

Purdue University maintains original copies of master's theses produced by Purdue University students. In the interest of promoting learning and discovery, Purdue University permits access to the master's theses archive.

Purdue University requests that authors of master's theses grant to the University the right to copy and distribute their theses. Such permission allows the author and the University to contribute to the advancement of knowledge and research by making the thesis available to scholars. Research becomes more broadly disseminated and may assist authors in future endeavors. Purdue University typically receives no monetary gain from the reproduction and distribution of master's theses except for recovering costs associated with such reproduction and distribution (e.g., without authors' permission, master's theses generally cannot be copied, in whole or in part, for such educational purposes as inter-library loan.)

Copyright ownership remains with the author in accordance with *Purdue University Executive Memorandum B-10*. This *agreement* does not prohibit the author in any way from entering into a publishing contract. The author retains all the exclusive rights granted to copyright holders under United States copyright law subject only to the rights granted to the University hereunder.

Agreement

I grant in perpetuity, without restriction, royalty free to Purdue University the nonexclusive right and license to reproduce, distribute, and display, in whole or in part, my master's thesis in any format now known or later developed.

I hereby acknowledge that the master's thesis submitted with this *agreement* is my original work, and I have the authority to grant the nonexclusive right and license specified above. I also acknowledge that I have obtained the necessary and appropriate permissions, including permission for uses in this *agreement*, to materials for which I do not own the copyright that are included in my master's thesis.

This *agreement* shall survive assignment of any and all exclusive rights provided to copyright holders in Section 106 of the United States copyright law.

I authorize Purdue University to maintain my thesis in any and all formats now known or later developed.

Author's Signature _____ Date _____

APPENDIX Q:

GS FORM 15: REQUEST FOR CONFIDENTIALITY

(more information available at http://www.gradschool.purdue.edu/thesis3.cfm)

Graduate School Form 15
(Revised 11/02)

PURDUE UNIVERSITY
GRADUATE SCHOOL
Request for Confidentiality of Thesis

Date _____

Thesis Title _____

Official Degree Title _____ Date Degree Expected _____

Author _____ Student ID No. _____

Major Professor _____ Graduate Faculty Identifier _____

Department _____ Department Code _____

REASON FOR CONFIDENTIALITY (Please check applicable items.)

- ☐ There may be patents resulting from research.
- ☐ Publication of the thesis or portions thereof is pending.
- ☐ Proprietary rights are involved.
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