

Purdue School of Engineering and Technology
Indiana University-Purdue University Indianapolis (IUPUI)

Master of Science in Technology
Student Handbook
Department of Engineering Technology

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

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1. INTRODUCTION

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

The School of Engineering and Technology offers graduate instruction leading to the Master of Science (M.S.) degree that enables students to concentrate on professional studies in technology in any of the disciplinary foci and/or areas of concentration (see below) offered by the school. Areas of concentration have specific plan of study requirements and are listed on the transcript. A directed project or course-only option is currently offered through the Master's program.

Disciplinary Foci

Department of Computer Information and Graphics Technology

Computer and Information Technology

Computer Graphics Technology

Information Assurance and Security (InfoSec) (Pending)

Department of Engineering Technology

Construction Engineering Management Technology

Engineering Technology

Department of Technology Leadership and Communication

Organizational Leadership and Supervision

Area of Concentration

Department of Engineering Technology

Facilities Management

Motorsports Engineering Technology

Department of Technology Leadership and Communication

STEM Education

Your degree is granted by the Purdue University Graduate School upon successful completion of all degree requirements. The Purdue School of Engineering and Technology Graduate Programs Office (<http://www.engr.iupui.edu/gradprogs/>) works closely with the Purdue University Graduate School in West Lafayette (<http://www.gradschool.purdue.edu>) and IUPUI Graduate Office (<http://www.iupui.edu/~gradoff/>) in a campus-wide coordination and administration of graduate Technology programs. Additionally, if you are an international student you will have contacts with the Office of International Affairs at IUPUI (<http://international.iupui.edu/>) regarding visas and immigration requirements. The Graduate Programs Office (<http://www.engr.iupui.edu/gradprogs/>) can direct you to the appropriate office for specific issues.

After admission, the first major task for each student is to contact your academic advisor to develop your Master's Plan of Study. The Plan of Study is a document which defines the academic program leading to the degree. The guidelines and procedure set forth in this handbook will help you to create your plan of study. Each student should meet with the graduate program contact in their designated department with questions about requirements, plans of study, or any other academic matters.

2. ADMISSION PROCESS

The graduate programs website, (<http://www.engr.iupui.edu/gradprogs/>) provides application information for domestic and international applicants, respectively. This section provides an overview to the requirements, types of admission, time limits and opportunities for financial assistance relative to graduate study in the Technology degree at IUPUI.

Requirements

Applicants to MS Technology 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 graduation examination required by your foci or area of concentration (see section 10). International applicants must also submit TOEFL scores. The IUPUI International Office web site lists the specific TOEFL score requirements for language proficiency (<http://iapply.iupui.edu/graduate/#english>).

After all the necessary admission's materials have been assembled by the School of Engineering and Technology Graduate Office, they are forwarded as a complete package to members of the Technology Graduate Committee in the department of intended study. There, the applicant's information is reviewed pursuant to the MS Technology's established admission criteria by the MS Technology graduate admissions committee. The committee admission recommendations may be one of the following:

- Admit without conditions,
- Admit with conditions (and these conditions must be specified),
- Recommend applying for Graduate Non-Degree admission to demonstrate ability to successfully pursue graduate level work (note that a student must reapply for admission to the School of Engineering and Technology after fulfilling conditions specified), or
- Deny.

MS technology admission recommendations are forwarded to the School of Engineering and Technology Associate Dean for Graduate Studies for review and recommendation to the Purdue University Graduate School. Departmental graduate admissions decisions are based on a combination of undergraduate work, graduate examination scores and the overall potential that each student presents. It must be noted that some of 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.

Time Limitation

There is no time limitation to completing the Master of Science in Technology degree as long as continued progress is made. Students who do not demonstrate continued progress by not enrolling in three consecutive semesters may be required to submit a new plan of study or may be dismissed from the degree program.

Financial Assistance

Availability

A limited number of teaching assistantships, graduate assistantships and/or research assistantships are available from each department within the MS Technology program. All assistantship applications are to be directed to the Department Head of the appropriate department. Additional information may be available from the MS Technology Chair.

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.

3. NEW STUDENT INFORMATION

Your IUPUI e-mail is the primary mode of communication used between the Graduate Programs office and all graduate students. Be sure that the Graduate Programs Office always has your current and active email address on file.

One of the first questions to address as a new student is how to register for classes after you have received a formal offer of admission from the Purdue University Graduate School.

Once you have been formally admitted, the School of Engineering and Technology Graduate Programs Office will send an enrollment packet to you by U.S. postal mail. You will find information regarding advising, registration, and various university and student services in the packet. If you have questions regarding advising and registration, contact your graduate program department.

Included in the enrollment packet you will receive from the Graduate Programs office are the following materials:

1. Your IUPUI University ID number, the name and contact information of your initial department academic advisor. All students are assigned an advisor (who may be temporary) when they are admitted to the MST program.
2. A Technology Master's Program Handbook. The handbook provides detailed information about the degree programs, degree requirements, and program policies and procedures.
3. Information on university services such as parking and permits, current tuition and fees, and the "JagTag" student ID card.

To be prepared for registration you should have information about the program, its requirements, and the courses. Along with this Master's Program Handbook, you should also consult the following:

1. Schedule of Classes. The official *Course Offerings* for each semester is accessible in the Student Center area of *OneStart* (<https://onestart.iu.edu>), the gateway to the university's web-based Student Information System (SIS). From here you can access the Schedule of Classes as well as the course registration system. You will need to activate your IUPUI username to register. If you need assistance with registration contact your advisor.
2. You should consult with your advisor to decide which courses you should take in your first semester.

When you have your class schedule prepared and are ready to register you can register directly via the web-based student information system *OneStart* (<https://onestart.iu.edu>).

4. MASTER'S DEGREE REQUIREMENTS AND OPTIONS

The Master of Science in Technology program requires a minimum of 33 credit hours. It is designed so that graduates holding a B.S. degree in a technology discipline or a related area can complete their degree either as a full time or a part time student. The program can typically be completed in 4 semesters (2 academic years).

The MST degree has two program options: Directed Project or Course-Only. The Directed Project option requires a minimum of 30 hours of coursework plus 3 credit hours of an independent study Directed Project. The Course-Only option requires a minimum of 33 hours of coursework. All plans of study (except areas of concentration or focus areas) require a primary Technology area of 9 credit hours. See section 8 Department Information for focus area and concentration plan of study details.

Credit Hour Requirements	Course Only Option	Directed Project Option
Required Core Technology Courses <ul style="list-style-type: none"> • TECH 50700 Measurement and Evaluation in Industry and Technology • TECH 50800 Quality and Productivity in Industry and Technology • TECH 64600 Analysis of Research in Industry and Technology 	9	9
Related Area of Study (see note)	24	21
Directed Project	None	3
Total Credits	33	33

Note: The related area of study must include graduate level courses from an approved course list offered by technology departments. See your academic advisor for requirements in your area of study.

Directed Project Option

See Appendix A for complete Direct Project option information.

Examination Requirement

Each candidate must pass a final oral examination in order to graduate. The 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. The final oral

examination must be scheduled with your advisor 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 the deficiencies.

Examining Committee

An examining committee will normally include the members of the student's advisory committee. Additional members may be appointed by the Dean for Graduate Studies. The advisory committee chairperson (the major professor) may recommend additional members for appointment.

Academic Requirements

Inactive Academic Status

Students who do not enroll in classes for three (3) consecutive academic sessions, including summer session, will be automatically placed in **inactive academic status**.

Students placed in inactive academic status are required to submit a new graduate application for re-admission to the program before they are permitted to enroll again. Completing and submitting a new application is a formal procedure to reactivate inactive academic status. All other supporting application materials are *not required* for re-admission.

Students should wait for their applications for re-admission to be officially approved by the Purdue University Graduate School before enrolling for classes. Registration activities that take place while in "inactive academic status" and before a new application for re-admission had been officially approved by the Graduate School are considered invalid registrations and will not count toward graduate credit.

Minimum Grade Requirements

The Technology graduate program maintains the following minimum standards to be in "good academic standing" in the Master's degree program.

To be in good academic standing, a Master's graduate student must maintain a cumulative grade point index of at least 3.00 out of 4.00 over the courses on his/her Plan of Study. A graduate student who is not in good standing at the end of the semester is automatically placed on "academic checklist" and is provided with a "warning letter". Registration is restricted when students are placed on academic checklist. Students on academic checklist are required to meet with their advisors and complete the form "Request for Temporary Checklist Clearance" for the checklist to be temporarily released for registration that semester. Should the student's cumulative grade point index remain below 3.00 at the end of the succeeding semester or summer session, he/she will be placed on probation. A student in probation may not be permitted to register for further graduate courses, pending academic review and approval by the Technology Graduate Committee.

The cumulative grade point index is calculated using the courses that are on the Plan of Study. If a course is taken more than once while the student is enrolled as a graduate student, only the most recent grade received in the course will be used in computing the grade point index. Transfer courses are not included in the computation of the cumulative grade point average. No grade of "D" or "F" is allowed for a course that is on the approved Plan of Study. All Master's students must achieve a final cumulative grade point index of 3.00 or higher for courses that are on the Plan of Study. Any course on the Plan of Study that carries a grade of "D" or "F" must be repeated. In the event of a deficiency in the cumulative grade point index, a course may be repeated but only the most recent grade received will be used in computing the index.

English Language Proficiency Requirements for International Students

English as Second Language (ESL) Requirements

All graduate degree-seeking international students whose English is not their first language must take the English for Academic Purposes (EAP) Placement Test (an English language proficiency examination) administered by the IUPUI English for Academic Purposes Program Office before they are permitted to enroll for classes after admission.

Students tested with English language deficiencies are required to take all of the remedial courses determined by the placement test and receive passing grades on those courses. There is one exception to the requirement: students placed into English G013 “Reading/Writing for Academic Purposes” may replace G013 with TCM 460 “Engineering Communication in Academic Context”. Students must begin taking the first English language course in the first semester of enrolment and complete the requirements in sequence before graduation. Students with incomplete English requirements will not be approved for graduation.

There may be unusual circumstances that merit a student to retake the EAP placement test. IUPUI policy allows one retake of the EAP test, to be taken preferably within the first semester. If the test scores show no significant improvement, the results of the previous test will stand and students will be required to take the assigned courses.

SPEAK Test for International Graduate Teaching Assistants

All non-native speakers of English must be tested for their oral English proficiency before they are assigned duties that involve direct student contact (teaching assistants, laboratory assistants, graders, and tutors). Students must take and pass the SPEAK Test, a nationally standardized test before the students are given an academic appointment. Students who fail to obtain the required minimum scores will need to take an ESL course, G020 “Communication Skills for International Teaching Assistants” (3 units) and take the test again before they can accept their appointments.

5. MASTER’S ADVISORY COMMITTEE

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) must be selected to chair the student's advisory committee and assist the student through the program. The major professor will become the most important contact person, and the major professor/student relationship must be a mutually acceptable one. The major professor serves concurrently as advocate, mentor, and supervisor of the graduate student.

Each graduate student is assigned a temporary advisor upon admission. The initial advisor plays an important role in establishing a timely and effective initiation of a graduate student’s program. Once you start your program and have taken a few classes, you will want to consult with at least three different professors in the School of Engineering and Technology to determine who you would like to serve as your major professor and academic advisor. Each graduate student is expected to choose a major professor before the end of their second semester.

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 advisory committee consists of three members of the graduate faculty. The major professor and one other member should be from the School of Engineering and Technology graduate faculty (refer to Appendix A), and an advisor for the related area (who must also be a member of the Purdue University graduate faculty). Members of the committee need not be faculty with whom the student has taken course work. 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 Purdue Graduate School via the School of Engineering and Technology Graduate Programs Office (ET 215). 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.

Contact your academic advisor for a list of graduate faculty and recommendations for appropriate graduate committee members.

The advisory committee should be selected preferably during the first enrollment semester, but not later than 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 signature. All admission conditions, if any, must be met or are being met at the time the plan of study is filed. A plan of study with unfulfilled condition/s must be accompanied by a written statement from the department chair or the head of the graduate program explaining why the condition/s have not been met and/or the resolution to the condition, if relevant.

After the Plan of Study is officially approved any changes to the plan would require a "Change to the Plan of Study" GS Form 13 be completed.

6. PLAN OF STUDY REQUIREMENTS

The philosophy of the School of Engineering and Technology at IUPUI 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. The major professor will also recommend possible related areas

and advisors. It is important that major professors maintain a reference list of potential IUPUI courses, and appropriate faculty contacts, relevant to their areas in order to assist graduate students in developing their plan of study.

The plan of study form (GS-6, see Appendix B) 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; and the date when the course was or will be completed. The plan of study is signed by each member of the advisory committee and the student. After review, the plan is signed by the Dean for Graduate Studies. The plan is then submitted to the Graduate School for formal approval. It is important that the major professor access the approved plan of study and periodically review progress of its completion with the graduate student. After an approved Plan of Study is on file, committee and course changes can be made at any time by completing the appropriate forms.

Primary Area

All Master of Science in Technology plans of study will have a primary area of 9 credit hours including the following core courses. Exceptions to this requirement include specific requirements for an area of concentration and/or acceptable substitutes to be discussed with the major professor:

- TECH 50700 Measurements and Evaluation in Industry and Technology
- TECH 50800 Quality and Productivity in Industry and Technology
- TECH 64600 Analysis of Research in Industry and Technology

Undergraduate courses may not be included in the primary area of the plan of study without special permission from the Graduate Technology Committee followed by the Associate Dean for Graduate Programs of the School of Engineering Technology.

Related Area

Each plan of study must include courses from a least one related area of 18-21 semester hours. Related area courses are based on your focus area or area of concentration such as ECET, MET, CGT, CIT, OLS, etc. It is encouraged that each related area should have a faculty representative on the student's advisory committee.

Undergraduate Credit in Related Area

A related area may include undergraduate courses (300 or 400 level) only when followed by appropriate 500- and 600-level courses. Undergraduate courses are subject to the approval of the student's advisory committee and the Dean for Graduate Programs. 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 6 semester hours of 300- and 400-level courses may be applied to graduate plan of study and a grade of "B" or better is required.

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:

Undergraduate Excess Credit

Undergraduate students attending IUPUI who have time available to take courses in excess of their undergraduate degree course requirements may earn a maximum of 12 semester hours of credit in 500-M.S. in Technology Student Handbook

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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.

Transfer Credit

A maximum of half the required course credit hours (15) at another accredited institution may be included in the Master's Degree plan of study. Graduate School policy states that all courses transferred must be acceptable for graduate credit at the school at which they were taken, must not have been used to meet the requirements for another degree, and must have been completed with a grade of "B" or better. 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. Grades from transfer courses will not be included in computation of the graduate point index.

WITHOUT EXCEPTION, ALL EXCESS UNDERGRADUATE AND TRANSFER CREDITS TO BE USED ON THE MASTER'S PLAN OF STUDY MUST BE APPROVED BY THE STUDENT'S ADVISORY COMMITTEE.

Post-Baccalaureate Registrant Credit

The Graduate School has created an enrollment category known as graduate non-degree 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 Assistant Dean for Graduate Studies, and the approval of the Graduate School.

A maximum of 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 12 SEMESTER HOURS.

Independent Study Credit

A maximum of 6 semester hours of independent study credit may be included in a plan of study.

Preparation and Filing of Master's Plans of Study (Form GS-6)

Contact your Advisor for assistance in preparing the Master's plan of study. The following are steps to preparing and submitting a plan of study for approval:

1. Review the portions of this Handbook to determine the requirements for the option you wish to pursue. Select courses that meet the degree requirements, and are appropriate for your area and interest. If possible, check that the courses you need will be offered at a time when you wish to take them.
2. Prepare a draft of your plan of study (blank included in Appendix B Forms).
 - a. Indicate courses in your primary area with a "P" in the left-most column labeled "Area". List primary area courses together as a group.
 - b. Related area courses should be indicated with an "R" in the "Area" column. List related area courses together as a group.

3. Select a faculty member as your major professor and to be the chair of your advisory committee. Confer with him/her for advice on the plan and ultimately his/her informal agreement to the plan.
4. In consultation with your major professor, select two additional faculty members to serve on your graduate advisory committee.
5. Prepare a computer-generated or typed version of your plan of study and submit it to your department. The department will provide the necessary department, degree and professor codes and will check for any admission conditions.
6. Once the department has checked your Plan of Study for accuracy and thoroughness, sign it, and carry it to the members of your advisory committee for their signatures.
7. The department will submit the original copy with all necessary signatures to the School's Graduate Programs Office. Your plan of study will be reviewed again by the Graduate Coordinator to ensure that the plan meets all format and program requirements, after which it will be submitted to the Purdue Graduate School for final approval.

7. OVERALL MASTER'S DEGREE PROCEDURAL CHECKLIST

To help students progress through their degree requirements, the following checklist will help them map a path through the School of Engineering and Technology's Master of Science program. This checklist of when program requirements should be completed is intended to communicate a general picture of the process. Specific and official deadlines are announced each semester, will be emailed to all MS in Technology Graduate Students, and are also available from the School of Engineering and Technology Graduate Office.

First Semester

1. Be aware of admission condition/s, if any, which must be satisfied.
2. With the help of your major professor discuss your career and educational objectives and, within the framework of the School of Engineering and Technology Master's Degree, draft a preliminary plan of study.
3. Register for classes.

Succeeding Semesters

1. 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, School of Engineering and 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.
2. Discuss the preliminary plan of study with each of the members of the advisory committee.
3. Using the Plan of Study (form GS-6), submit a draft plan of study to your committee members.
4. Refine the plan of study, if needed, based on the committee's suggestions.
5. Have the department secretary check through the Plan of Study for thoroughness and accuracy.
6. If you have admission condition/s, ensure that the condition/s are met.
7. Submit your final plan of study to your committee members and the Graduate Programs Office.
8. Identify a tentative directed project problem area if you are pursuing this option.

9. Register for TECH 64600 if required in your plan of study prior to your last semester.
10. Register for classes for the next semester.
11. Apply for graduation before the start of your last semester. Watch for the deadline.

Final Semester

1. Register for any remaining courses on the plan of study.
2. Register for *Candidacy (CAND) 99100* to declare your status as a “candidate for degree”. CAND 99100 is a “no credit, no cost” registration.
3. Students who do not complete their degree requirements by the end of the intended semester for graduation will need to register for Candidacy (CAND) 99200 during the next semester. CAND 99200 is no credit but does require a fee. See appendix D for more information about candidacy.
4. Insure that any changes in your plan of study have been approved using the Change to the Plan of Study (form GS-13).

8. DEPARTMENT OF ENGINEERING TECHNOLOGY PROGRAMS

CONCENTRATIONS

A concentration is a specialized area of graduate study with a defined plan of study and admissions requirements. The concentration is listed on a student's final transcript. The Department of Engineering Technology offers the following concentrations:

Facilities Management Concentration

The M.S. Degree in Technology, Facilities Management concentration is a 100% on-line graduate program designed for the working student. The program provides an integrated experience in facilities management with emphasis on project and contract management, engineering systems management and energy management. The program also requires an independent directed project in the area of facilities management. The concentration can be completed in 2 calendar years by following the plan of study listed below, but may be taken at a pace meeting a student’s needs.

Facilities Management Concentration Plan of Study:

1st Semester – Fall

ART 51500 Introduction to Facilities Engineering Systems
IET 51500 Facilities Planning and Management

2nd Semester – Spring

ECET 53500 Energy Management for Buildings
ECET 54500 Management of Telecommunications Infrastructure

3rd Semester – Summer

TECH 58100 Project Management

4th Semester – Fall

IET 530 Facilities Contract Management
TECH 50800 Quality and Productivity in Industry and Technology

5th Semester – Spring

IET 55000 Financial Aspects of Facilities Management

IET 53800 Facilities Maintenance and Operation

6th Semester – Summer

Elective

IET 59800 Directed Project

Recommended Electives

TECH 58100 Greening Organizations

IET 57500 Supply Chain Logistics Operations in Facilities and Industry

TECH 58100 Sustainable Practices in Business and Industry in Germany or France

TECH 58100 Emergency Management for Facilities Personnel

Admission Requirements – Facilities Management Concentration:

- Have completed or will be completing a bachelor’s degree from an accredited university.
- Coursework or knowledge of trigonometry and statistics.
- Obtained an undergraduate cumulative GPA of 3.0 or higher on a 4.0 scale.
- Have taken the GMAT general test or the GRE.
- International students who are graduates of non-US institutions and whose first language is not English are required to take the Test of English as a Foreign Language (TOEFL). A minimum score of 550 on the paper version or 213 on the computer version is required.

Motorsports Concentration

This program is applicable for either students seeking additional motorsport industry training immediately after completion of their bachelor's degree in an engineering or technology program or for industry professionals wishing to resume their studies to complete a master's degree. The Motorsports concentration provides an integrated experience in motorsports with emphasis on race engineering, project management. Student pursuing the Motorsports concentration may choose from a course only option or an option requiring a directed project in an area related to the motorsports industry. Both options require 33 credit hours.

Motorsports Concentration Plan of Study:

	Option 1 (w/project)	Option 2 (classes only)
<u>M.S. Technology Core Courses (9-12 credits)</u>		
TECH 50700 Measurement & Evaluation in Industry	3 credits	3 credits
TECH 50800 Quality and Productivity in Industry & Technology	3 credits	3 credits
TECH 64600 Analysis of Research in Industry & Technology	3 credits	3 credits
TECH 58100 Directed Project with Motorsports Theme	3 credits	

Motorsports Core Courses (Option 1 minimum 9 credits, Option 2 minimum 12 credits)

MSTE 48200* Motorsports Aerodynamics (3 credits)

MSTE 47200* Vehicle Dynamics (3 credits)

MSTE 42600* IC Engines (3 credits)

ME 50400 Automotive Controls (3 credits)

TECH 50400 Motorsports Project Management (3 credits)

TECH 52100 Practicum in Motorsports Design and Application (4 credits)

TECH 53100 - Motorsports Topics Seminar (2 credits)

TECH 58200 – Motorsports Special Topics (1-3 credits)

*Maximum of 6 credit hours of 30000 and 40000-level classes allowed.

Related Courses – Select From (remaining credits)

TECH 58100 Advanced Computational Methods for Engineering Technology (3 credits)

MATH 53700 Applied Mathematics for Scientists and Engineers I (3 credits)

MATH 52800 Advanced Mathematics for Engineering and Physics II (3 credits)

MATH 57800 Mathematical Modeling of Physical Systems I (3 credits)

TECH 58100, ME 55000 or equivalent Advanced Stress Analysis (3 credit)

TECH 58100, ME 56300 or equivalent Advanced Vibrations (3 credit)

TECH 58100, ME 55800 or equivalent Advanced Materials (3 credit)

Alternate courses with approval of advisor

Admission Requirements – Motorsports Concentration:

- Have completed or will be completing a bachelor's degree from an accredited university.
- Coursework or knowledge of trigonometry and statistics.
- Obtained an undergraduate cumulative GPA of 3.0 or higher on a 4.0 scale.
- Have taken the GRE.
- International students who are graduates of non-US institutions and whose first language is not English are required to take the Test of English as a Foreign Language (TOEFL). A minimum score of 550 on the paper version or 213 on the computer version is required.

FOCUS AREAS

Focus areas require coursework related to a specific discipline or topic in addition to the M.S. Technology core courses. Focus areas are not listed on the student's final transcript but provide a student with a defined plan of study.

Construction Engineering Management Technology Focus Area

This program is applicable for students seeking a graduate work related to construction engineering and construction management. The Construction Engineering Management Technology (CEMT) focus area has an emphasis on building and infrastructure technology, construction project management, and topics in advanced construction technologies. Student pursuing the focus area may

choose from a course only option or an option requiring a directed project in an area related to the construction industry. Both options require 33 credit hours.

Construction Engineering Management Technology Focus Area Plan of Study:

<u>M.S. Technology Core Courses (9-12 credits)</u>	<u>Option 1 (w/project)</u>	<u>Option 2 (classes only)</u>
TECH 50700 Measurement & Evaluation in Industry	3 credits	3 credits
TECH 50800 Quality and Productivity in Industry & Technology	3 credits	3 credits
TECH 64600 Analysis of Research in Industry & Technology	3 credits	3 credits
TECH 58100 Directed Project with Construction Theme	3 credits	

CEMT Core Courses (Option 1 minimum 9 credits, Option 2 minimum 12 credits)

- TECH 58100 Innovations in Construction (3 credits)
- TECH 58100 Land Development (3 credits)
- TECH 58100 Underground Infrastructure Development (3 credits)
- TECH 58100 Infrastructure Asset Management (3 credits)
- TECH 58100 Entrepreneurship in Construction (3 credits)
- TECH 58100 Sustainable Construction (3 credits)
- TECH 58100 Engineering Economics for Construction (3 credits)
- TECH 58100 Advanced Construction Management (3 credits)
- TECH 58100 Advanced Project Control (3 credits)
- TECH 58100 Advanced Construction Estimate and Bidding (3 credits)
- TECH 58100 Temporary Structures (3 credits)
- TECH 58100 Construction Conflict Management (3 credits)
- TECH 58100 Special Topics (Independent Study) (3 credits)

Related Courses (remaining credits)

Electives with approval of advisor

Admission Requirements – Construction Engineering Management Technology Focus Area:

- Have completed or will be completing a bachelor’s degree from an accredited university.
- Undergraduate coursework or knowledge of in building, civil, or/and construction engineering and management.
- Obtained an undergraduate cumulative GPA of 3.0 or higher on a 4.0 scale.
- Have taken the GRE.
- International students who are graduates of non-US institutions and whose first language is not English are required to take the Test of English as a Foreign Language (TOEFL). A minimum score of 550 on the paper version or 213 on the computer version is required.

Engineering Technology Focus Area

This program is applicable for students seeking graduate work related to Electrical or Mechanical Engineering Technology. The Engineering Technology focus area has an emphasis on electrical and mechanical design, testing and manufacturing. Student pursuing the focus area may choose from a course only option or an option requiring a directed project in an area related to an engineering technology area. Both options require 33 credit hours.

Engineering Technology Focus Area Plan of Study:

<u>M.S. Technology Core Courses (9-12 credits)</u>	<u>Option 1 (w/project)</u>	<u>Option 2 (classes only)</u>
TECH 50700 Measurement & Evaluation in Industry	3 credits	3 credits
TECH 50800 Quality and Productivity in Industry & Technology	3 credits	3 credits
TECH 64600 Analysis of Research in Industry & Technology	3 credits	3 credits
TECH 58100 Directed Project	3 credits	

Engineering Technology Core Courses (Option 1 minimum 9 credits, Option 2 minimum 12 credits)

IET 53800 Facilities Maintenance and Operation (3 credits)
TECH 58100 Project Management (3 credits)
TECH 58100 Advanced Computational Methods for Engineering Technology (3 credits)
TECH 58100 Energy Assessment (3 credits)
TECH 58100 Electrical Renewable Energy Systems [proposed]
ECET 53500/TECH 58100 Energy Management for Buildings
ECET 54500/TECH 58100 Management of Telecommunications Infrastructure
TECH 58100 Renewable Energy Technology
TECH 58100 Heat Transfer
TECH 58100 3-Dimensional CAD Applications
TECH 520 - Technology, Society, and Ethics
MSTE 42600* IC Engines (3 credits)

*Maximum of 6 credit hours of 30000 and 40000-level classes allowed.

Related Courses (remaining credits)

Electives with approval of advisor

Admission Requirements – Engineering Technology Focus Area:

- Have completed or will be completing a bachelor's degree from an accredited university.
- Undergraduate coursework in electrical, computer or mechanical engineering technology.
- Obtained an undergraduate cumulative GPA of 3.0 or higher on a 4.0 scale.
- Have taken the GRE.
- International students who are graduates of non-US institutions and whose first language is not English are required to take the Test of English as a Foreign Language (TOEFL). A minimum score of 550 on the paper version or 213 on the computer version is required.

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

Department of Engineering Technology Office of Graduate Programs
Purdue School of Engineering and Technology
799 West Michigan Street, ET 201M
Indianapolis, IN 46202-5160
Telephone: 317.274.2534
Email: rsklein@iupui.edu

Appendix A: Directed Projects

DIRECTED PROJECTS

To pursue the Directed Project, students must first develop a proposal and secure its approval by their advisory committee. A formal meeting of the student's graduate committee is required to evaluate the proposal and the School'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 TECH 646 Analysis of Research in Industry & Technology. Students may not receive more than three credits for a Directed Project.

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

Directed Project Characteristics

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

Directed Project Objectives

By successfully completing a Directed Project, a student demonstrates his/her ability to:

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

Appendix A: Directed Projects

Effective Directed Project Practices

- Directed projects should require students to select and employ an effective Research & Development procedure(s) to address the problem.
- A directed project generates a new solution, product or procedure. It may involve “proof of concept” and it must be of direct value to business or industry or to the education for business or industry.
- A possible component (although not a requirement) of the directed project might be an Implementation Plan (i.e., recommendations for deploying the developed solution). This plan should include the suggested near and midterm steps.
- Industry partners are encouraged for validation or other involvement.
- 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.
- Employ either a) business or industry style manuals such as the *Chicago Manual of Style*, b) other relevant business/industry writing style manual, or c) the APA manual when required by the advisor.

PREPARING DIRECTED PROJECT PROPOSALS

There are no absolutes in the preparation of a directed project proposal. 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.

It does not matter whether a proposal is being prepared for a graduate advisory committee or for an employer. Proposals must be succinct and direct. Clear, jargon-free prose that establishes the need for the study and a proposed method of solution are required--nothing more (or less). While School of Engineering Technology faculty have not established specific proposal length requirements, a proposal should be sufficiently detailed to enable the graduate committee to render effective judgment and share appropriate advice on how to proceed.

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

Appendix A: Directed Projects

DIRECTED PROJECT PROPOSAL CONTENTS

Cover Page

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

Susan P. Jones, Chair
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

Abstract

The student must prepare a one (maximum) page abstract that succinctly describes the proposed problem addressed, purpose for the study, significance of the proposed study, an overview of the proposed methods to be employed and of the anticipated deliverables.

Introduction

The form of the introduction will vary with the nature of the proposed project. Typically they range are 1-3 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 context and 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 global (*vis-à-vis* specific) terms. This approach creates an overall frame of reference that makes it much easier for the reader to focus on the more detailed portions of the proposal.

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

Problem Statement

There is no section of a proposal that gives beginning proposal writers more challenges than the "Statement of the Problem" section. Too often their 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

Appendix A: Directed Projects

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?"

Significance

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. In the context of a directed project or thesis, this is the part of the proposal in which the proposed project is 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. 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.

Literature Review

The review of literature serves several important functions. First, it is a method to indicate that the problem is more universal than the specific proposal. Second, it serves as a justification for the proposed study in that others have addressed related problems. Third, it positions the work in the field giving context to what has and has not been done and where this project/thesis is positioned therein. Fourth, it identifies possible methods for the conduct of the study by identifying possible data collection strategies, statistical procedures, or sources of other procedural information. Finally, the review of literature should document justification for the proposed study.

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

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

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

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

Purpose

Once the problem and its significance have been stated, the specific purpose of the project must be described. Here is where the student indicates what they propose to do about the problem, i.e., what part of it they wish to address and what the deliverables of their work will be. There are essentially three ways to state the purpose of a study, as shown in the following examples:

Appendix A: Directed Projects

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

Definitions

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

Assumptions

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

Scope or Delimitations

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

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

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

Methodology (or Procedures)

All procedures to be used in the proposed study should be defined. For empirical studies, be sure to define the population, sampling frame and sampling method. 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.

Time Action Plan

A time action plan establishes the time frame in which the conduct of the proposed study will occur. This section is vital when there are strict time constraints on data collection or other factors affecting

Appendix A: Directed Projects

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.

Limitations

Limitations are descriptions of 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.

References

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

Note on Use of Acronyms

The paragraph below 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.

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? Hopefully, that need will never arise.

PREPARING THE FINAL DIRECTED PROJECT REPORT

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

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

Final Report Contents

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

Results (or Findings)

In this section, 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. These findings can be followed by discussion which 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.

Appendix A: Directed Projects

Conclusion, 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. Additionally, it is often useful to link the conclusions to key findings from the literature review. 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.

Appendices

Include appendices as needed. The appendices should include titles and referenced in the body of the final report.

FINAL ORAL EXAMINATION PROCEDURES

Appointment of the Examining Committee & Scheduling the Final Oral Examination

The examining committee will usually be identical to 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 examination and this must occur within the deadlines established by the Graduate School. The major professor is expected to take initiative in assisting the student with this procedure. The date, time, period, facilities, and equipment needs for the meeting are to be transmitted to the School of Engineering and Technology Graduate Programs Office by the major professor. This notice may be transmitted electronically; HOWEVER, major professors should not assume the notice has been received until they have written confirmation from the school graduate office.

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

The school graduate office will then distribute copies of approved forms to the student and all advisory committee members. This activity must be completed **NO LESS THAN THREE WEEKS PRIOR TO THE EXAMINATION DATE.**

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

If, however, the examining committee is to be different from the advisory committee (for example, when a committee member is unable to serve), a replacement member must be appointed, a Request for Appointment of Examining Committee form completed and submitted to the Graduate Programs Office to be forwarded to the Purdue University Graduate School **NO LESS THAN THREE WEEKS PRIOR TO THE EXAMINATION DATE.**

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

Appendix A: Directed Projects

Completing the Directed Project Requirement

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

If 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 to graduate 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 the Graduate Office, major professor and each member of the examining committee requesting a copy.

Checklist of Steps in Completing a Directed Project

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

Appendix B: Forms and Templates

1. Purdue Plan of Study Form GS-6
2. Purdue Plan of Study Change Form GS-13
3. Purdue Report of Master's Examining Committee GS-7
4. Directed Project Proposal Cover Sheet
5. Directed Project Final Report Cover Sheet

PURDUE UNIVERSITY GRADUATE SCHOOL

Request for Change to the Plan of Study

(Please type)

Department _____ Department Code _____ Date _____

Name of Student _____ PUID No. _____ *Committee _____
Last First Middle

CHANGE OPTION TO: _____ Nonthesis _____ Thesis _____ certification

COURSE CHANGES _____ for a master's degree requires that all members of _____

	Course No. & Abbr.	Credit Hours	Official Course Title
Delete			
Add			
Delete			_____ committee concur that the student has satisfactorily completed _____
Add			
Delete			
Add			
Delete			_____ the examination. If the committee has four or more members, a single member _____
Add			

COMMITTEE CHANGES _____ may withhold his or her signature of approval _____

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

Reason(s) for the above request:

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

SIGNATURES:

Student

Committee Member(s) Added

Major Professor

Committee Member(s) Deleted

Head of the Graduate Program

Academic Dean (if required)

Graduate School Dean

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

Submit original plus one copy to the Graduate School.

PURDUE UNIVERSITY
GRADUATE SCHOOL
Report of Master's Examining Committee

Name of Candidate _____ PUID No. _____

Department _____ Department Code TECH

Date Examination Held _____

Degree Sought:

- Master of Arts
- Master of Science
- Master of _____

Basis of Recommendation:

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

Degree Recommendation:

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

Thesis Award (if applicable):

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

Examination

Approve Disapprove

Examining Committee:

Graduate Faculty Identifier

<input type="checkbox"/>	<input type="checkbox"/>	_____, Chair	_____
<input type="checkbox"/>	<input type="checkbox"/>	_____	_____
<input type="checkbox"/>	<input type="checkbox"/>	_____	_____
<input type="checkbox"/>	<input type="checkbox"/>	_____	_____
<input type="checkbox"/>	<input type="checkbox"/>	_____	_____

Recorded by: _____
Head of the Graduate Program Date

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

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



**SCHOOL OF ENGINEERING
AND TECHNOLOGY**

A PURDUE UNIVERSITY SCHOOL
Indianapolis

TITLE

A Directed Project Proposal

Submitted to the Faculty

of

Purdue School of Engineering and Technology
Indianapolis

by

Your Name

In partial fulfillment of the requirements for the

Degree of Master of Science in Technology

Committee Member

Approval Signature

Date

Professor Name, Chair
Related Area

Professor Name
Related Area

Professor Name
Related Area



**SCHOOL OF ENGINEERING
AND TECHNOLOGY**

A PURDUE UNIVERSITY SCHOOL
Indianapolis

TITLE

A Directed Project Final Report

Submitted to the Faculty

of

Purdue School of Engineering and Technology
Indianapolis

by

Your Name

In partial fulfillment of the requirements for the

Degree of Master of Science in Technology

Committee Member

Approval Signature

Date

Professor Name, Chair
Related Area

Professor Name
Related Area

Professor Name
Related Area

Appendix C: IUPUI Technology Faculty and Identifiers

ACHESON, DOUGLAS.....	X0566	HAMMONS, REBECCA.....	X0690
BALDWIN, DANIEL.....	X0560	HARLEY, GABRIEL.....	X0630
BANNATYNE, MARK	X0467	HO, THOMAS	X0468
BERNSTEIN, MICHAEL	X0727	HOLT, ALAN.....	X0590
BLOHM, BRYON	X0678	HOSTETTER, CAROL	X0632
BORME, ANDREW	X0667	HOVDE, MARJORIE.....	C4333
BROEKER, CAMILLE	X0709	HUNDLEY, STEPHEN.....	X0567
BUCKWALTER, JOHN	X0674	HYLTON, PETER.....	X0569
BURNS, DEBRA	X0740	ISELEY, DAVID	X0544
CHEN, RONGRONG	X0511	IZADIAN, AFSHIN	X0607
CHRISTE, BARBARA	X0688	JAFARI, ALI	X0492
CONRAD, WILLIAM.....	X0503	JUSTICE, CONNIE	X0461
COONEY, ELAINE	X0498	KAFOURE, THOMAS	X0728
COWAN, DAVID.....	X0535	KIESER, DAVID.....	X0527
DARE, MARY.....	X0680	KINASH, OLEH	X0619
DIEMER, TIMOTHY	X0594	KOCH, CLINTON	X0576
EDLIN, CRAIG.....	X0599	KOO, DAN.....	X0633
EDWARDS, RICHARD	X0561	LI, FENG	X0608
EGAN, TOBY	X0700	LIN, WILLIAM	X0439
EIKENBERRY, SHAWNA.....	X0605	LITTLE-WILES, JULIE	X0712
EVANS, NANCY	X0634	LIU, HONGBO	X0741
FELDHAUS, CHARLES.....	X0464	MARKOFF, RICHARD	X0654
FERNANDEZ, EUGENIA	X0438	MARSHALL, KEVIN.....	X0589
FIELDS, MICHAEL.....	X0661	MCLAUGHLIN, EMILY	X0614
FINCH, CHRISTOPHER.....	X0730	MEDINA, MONICA	X0681
FOLEY, CHRIS.....	X0618	MEISENHOLDER, HELEN	X0649
FOX, PATRICIA	X0570	MILFORD, KIMBERLY.....	X0713
FRANK, MARY ANN	X0609	MILLER, JEFFREY	X0668
GOODMAN, DAVID.....	X0604	NICKOLICH, DAVID	X0546
GOODWIN, CLIFF.....	X0465	O'DONNELL, AMY.....	X0628
GRIFFITH, DANIEL.....	X0611	OSCHMAN, STEVEN	X0552
GROVE, KATHLEEN	X0714	OTOUPAL-HYLTON, WENDY	X0729

Appendix C: IUPUI Technology Faculty and Identifiers

PFILE, RICHARD	X0440	TALBERT-HATCH, TERRI	X0677
PISKOROWSKI, JEROME	X0725	TURNER, PATRICIA	X0600
PITT, JEROME	X0516	WEDEL, MICHELE	X0602
RAMAKRISHNAN, DEEPAK	X0673	WHITE, JAMES.....	X0664
RAYMOND, SCOTT.....	X0666	WOLTER, ROBERT	X0593
RENGUETTE, CORINNE	X0701	WORKMAN-GERMANN, JAMIE	X0548
RENNELS, KENNETH	X0549	WORLEY, WANDA	X0568
SENER, ERDOGAN	X0491	WU, HUANMEI	X0479
STARKS, JOY.....	X0592	YEARLING, PAUL	X0665

List updated February 5, 2014. The current list of approved technology graduate faculty can be found at:
<http://www.engr.iupui.edu/sites/graduateprograms/faculty-staff/documents/TECH1.pdf>

Appendix D: Candidacy Requirements

School of Engineering and Technology Graduate Programs Candidacy Registration – New Policy Effective Fall 2014

Candidacy registration is required of all graduate students in the final semester of their plan of study. The Graduate School has two options applicable to M.S. Technology students to certify awarding of the degree (graduation) at the end of a fall, spring or summer term.

Final Semester

- Student must be enrolled in at least 1 credit of fee-bearing coursework, i.e. regular course(s) or a directed project.
- Student must register for CAND 99100 Candidate to declare their status as a “candidate for degree”. CAND 99100 has no credit and zero cost.

Subsequent Semesters

- Students with one of the following situations must register for CAND 99200 Degree Only in the next semester of matriculation:
 - Completed all degree requirements
 - HAVE NOT YET completed the Directed Project **OR** (not both)
 - HAVE NOT YET resolved one or more grades of Incomplete (**I**)
- Student must register for CAND 99200 Degree Only to declare their status as a “candidate for degree”. CAND 99200 has no credit but does require a fee (2014 fee is \$125)
- FAILURE to successfully resolve all Incomplete (**I**) grades by the end of the term will require:
 - A grade of “F” be assigned for CAND 99200
 - Enrollment in CAND 99100 the subsequent term
 - Enrollment in a *fee-bearing* course the subsequent term
 - Resolution of all remaining grades of Incomplete (**I**)