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

Master of Science in Technology
Student Handbook

Department of Technology Leadership and Communication

https://et.iupui.edu/departments/tlc/programs/ols/grad/
https://et.iupui.edu/departments/tlc/programs/tcm/grad/

The information in this handbook is as accurate as possible for the 2023-2023 academic year.

Because of the campus realignment scheduled to take effect on July 1, 2024, much of the information in this handbook and on our websites may change after that date.

Rest assured that the faculty in the Technology Leadership & Communication Department are committed to helping our students finish their degrees, preferably before July 1, 2024 if possible.

For information about the realignment, visit https://www.iupui.edu/vision/faqs.html

August 1, 2023-July 1, 2024

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For additional TLC information
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1. Introduction

Welcome to the Master of Science in Technology (MST) degree program at IUPUI. This handbook describes the requirements, policies, and regulations for the MST degree program offered by the Purdue School of Engineering and Technology at Indiana University-Purdue University, Indianapolis (IUPUI). The guidelines and procedures in this handbook will help you

- move smoothly through your studies,
- prepare your Plan of Study,
- meet the degree requirements, and
- graduate.

The Department of Technology Leadership & Communication offers

Concentrations: Organizational Leadership, Technical Communication
Certificates: Human Resources Development, Project Management, Engineering Leadership

Concentrations within the MST offer specific Plan of Study requirements and are listed on your transcript after graduation.

The MST degree also offers either a directed project or course-only option. For more information on these options, see section 4 of this handbook.

When you have completed all degree requirements, the Purdue University Graduate School will grant your degree. The Purdue School of Engineering and Technology Graduate Programs Office works closely with the Purdue University Graduate School in West Lafayette and the IUPUI Graduate Office in coordinating and administering graduate Technology degrees, certificates, and concentrations.

Additionally, if you are an international student, contact the Office of International Affairs at IUPUI regarding visas and immigration requirements.

The School of Engineering and Technology Graduate Programs Office in ET215 can direct you to the appropriate campus office if you have additional questions about any aspect of your studies.

Please refer to this handbook frequently throughout your studies.

2. Applying for Admission

This section provides information about the requirements, types of admission, and opportunities for financial assistantships relative to graduate study in the MST degree and TLC graduate-level certificates.

To find application information for domestic and international applicants, visit the graduate admissions website https://graduate.iupui.edu/admissions/apply.html

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

- an electronic application for admission to the Graduate School, found at https://graduate.iupui.edu/admissions/apply.html . Click the Apply Now button and follow the instructions.
- references for three letters of recommendation (submitted through the online application form)
- a ~400-word statement of purpose indicating your career goals and purposes for pursuing graduate studies.
- official original transcripts of all previous college coursework
- results of the Graduate Record Examination (GRE) if you have not earned your undergraduate degree from a regionally accredited institution. However, if you have earned your undergraduate degree from a regionally accredited institution, you may submit your GRE scores, but they are not required.

If you are an international applicant whose first language is not English, submit official TOEFL or IELTS scores. For more information on international admissions, visit https://et.iupui.edu/prospective/graduate/admissions/ and scroll through the page.

After you submit all required application materials, a TLC departmental admissions committee reviews the materials to determine if they meet the MST admissions criteria. The admissions committee examines your background, reasons, and goals for seeking the degree and determines if you are likely to be successful in the program.

Graduate admissions decisions typically are based on a combination of

- the quality of your undergraduate GPA (typically at or above 3.0 on a 4.0 scale)
- GRE scores (if required),
- letters of recommendation, and
- the overall potential that you present in the statement of purpose.

The TLC Department lists application deadlines on its website, but these dates apply mostly to people who plan to apply for research assistantships. For all other students, we practice a “rolling” admissions process in which we try to complete reviews and communicate our recommendations within several weeks of receiving all application materials.

We recommend applying at least six weeks before the start of a new term so that all materials can be processed in time to enroll for classes. International applicants may require at least 12 weeks for processing.

We admit students in the spring, summer and fall terms, so when applying, specify when you wish to begin your studies.

Types of Admission Recommendations

After reviewing your application materials, the admission committee may recommend one of the following:

- Admit without conditions,
- Admit with conditions for continuing enrollment (these conditions will be specified),
- Recommend applying for Graduate Non-Degree status and taking courses to demonstrate ability to successfully pursue graduate level work (you will reapply for admission to the program after fulfilling specified conditions), or
- Deny.

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

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

You will receive an e-mail communicating the recommendation of the admissions committee, typically several weeks after all materials are submitted.

Financial Assistance

Graduate Research Assistantship Appointments

To provide an opportunity for students to progress satisfactorily toward their degrees, a limited number of departmental graduate assistant (GA) research appointments may be offered for one-half time (about 20 hours per week) and for a maximum of two academic years. These Research Assistantships include a modest stipend, basic health insurance, and a tuition waiver. Assistantships do not cover the cost of student fees assessed each term, so GAs will be responsible for those fees. If you are interested in an assistantship, get in touch with the TLC Graduate Chair at the start of the spring term.

Renewals of GA appointments for a second year will be based on satisfactory performance in the position, academic progress toward Plan of Study requirements, and the availability of funding.

General financial aid

Graduate financial aid is available, but typical requirements and availability may differ from your experiences as an undergraduate. For more information, visit https://graduate.iupui.edu/admissions/financial-support/index.html

IU/IUPUI employee tuition benefit

Student who are employees at IU or IUPUI may be able to take advantage of the tuition benefit offered as part of their employment. For more information, see https://hr.iu.edu/benefits/tuition.html
(We have received word that IU employees who have begun the degree before July 1, 2024 will be able to continue to use this tuition benefit after that date when the School of Engineering & Technology is integrated fully with Purdue University. Please check with IU HR for details.)

3. Getting Started after Admission

Once you have been formally admitted, the School of Engineering and Technology Graduate Programs Office will send you an admission and enrollment notification by e-mail. This message will also include the name of your initial advisor.

If you have questions regarding advising and registration, contact the TLC department or your advisor.

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

Activate your IUPUI username before registering for courses.

To be prepared for courser registration, review Section 8 in this handbook to learn about your program, its requirements, and the available courses.

In addition, consult the Schedule of Classes. The official Course Offerings for each term are accessible in the Student Center area of One.IU (https://one.iu.edu/), the gateway to the university's web-based Student Information System (SIS). From here, you can search for the Schedule of Classes as well as the course registration system. If you need assistance with registration, contact your advisor.

To decide which courses to take in your first term, consult with your advisor. When you have your class schedule prepared and are ready to register, go to One.IU (https://one.iu.edu) and search for Class Registration. Follow the instructions there to register.

4. Understanding the MS Technology Degree and Requirements

The Master of Science in Technology (MST) program requires a minimum of 33 credit hours.

The degree is designed so that graduates holding a B.S. degree in a technology discipline or a related area can complete their degree as either a full time or a part time student.

The MST degree has two options: Directed Project or Course-Only.

- The Directed Project option requires 30 hours of coursework and three credit hours of an individual Directed Project (see your advisor for details).
- The Course-Only option requires 33 hours of coursework. (Most of our students choose this option.)

The TLC Plans of Study require you to complete nine credit hours of core courses, as listed below.

Core Credit Hour Requirements	**Course Only Option**	**Directed Project Option**
Required Core Technology Courses • OLS 50701 Quantitative Analysis and Analytics for Leaders **or** FMGT 53500 Measurement & Evaluation in Industry and Technology • TCM 51000 Effective Workplace Technical Communication **or** CIT 50801 Quality and Productivity in Industry & Technology **or** OLS 53010 Mixed Methods Research • OLS 57100 Advanced Project Management	9	9
Related Area of Study	24	21
OLS 59800 Directed Project	None	3
Total Credits	**33**	**33**

Note: More than 50% of all the coursework must be from a Purdue School.

When you have earned about 15 credit hours, contact your advisor to develop your Master's Plan of Study following the Instructions. The Plan of Study defines the academic program leading to the degree.

Meet with your advisor regularly to address questions about requirements, plans of study, or other academic matters.

Choosing the Directed Project Option

If you wish to pursue an independent applied research project in your area of interest or specialization, under the direction of an academic advisor, select the Directed Project option. You will take 30 hours of typical coursework in addition to the directed project course, which is worth three credit hours. For more details on the Directed Project, see your advisor.

Choosing the Course-Only Option

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

Completing the MST within Time Limitations

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

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

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

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

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

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

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

If you are on the academic checklist, ask your advisor to e-mail the E&T Recorder to request permission for you to register for the coming term.

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

If you take a course more than once while enrolled as a graduate student, only the most recent grade received in the course will count in computing the grade point average.

Transfer courses are not included when calculating the cumulative grade point average.

To earn the MST, achieve a final cumulative grade point index of 3.00 or higher in courses that are on the Plan of Study.

If you earn a grade of "F" in a course that is on the approved Plan of Study, you must repeat the course and receive a grade of C or higher as well as achieving an overall 3.00 GPA in the courses on your Plan of Study.

Full-time study requirements for International Students with F-1 visas
To maintain F-1 visa status, you must enroll full-time (at least eight credit hours) each fall and spring term. You do not need to enroll in summer terms, but you may.

You are allowed to enroll in one on-line course each spring and fall semester except for the final term of study, during which you cannot enroll in an online course. In the summer, you may be able to enroll in more than one on-line course; check with the Office of International Affairs for details.

Demonstrating English Language Proficiency for International Students

Taking the English for Academic Purposes (EAP) placement test

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

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

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

One exception applies: If you are placed into English G013 "Reading/Writing for Academic Purposes," you may replace G013 by taking TCM 56000 Technical & Scientific Communication in Academic Contexts.

You must complete these English requirements to be approved for graduation.

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

6. Selecting an Advisor (and Advisory Committee for Directed Project Students)

Selecting a Major Professor/Advisor
You will be assigned an initial advisor upon admission who will help in establishing an effective beginning to your program. (If you have a GA appointment, you will typically complete a Directed Project.)

If you choose to complete a Directed Project, you will determine whom you would like to serve as your major professor and academic advisor. The major professor serves as your advocate, mentor, and supervisor.

This advisor will guide the development of a Plan of Study, which is unique to each student. The major professor will become the most important contact person, and the major professor/student relationship must be a mutually acceptable one.

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

When you complete the Plan of Study (see section 6), include this advisor's name and the names of Advisory Committee members, as described below.

If you are not completing a Directed Project, list only your advisor on your Plan of Study. Follow the Instructions when you do so.

Selecting an Advisory Committee if You are Completing a Directed Project
If you are planning to complete a Directed Project, you and your advisor will select at least two more people for your advisory committee who will assist you in preparing the Plan of Study and offer advice during your graduate work. They will also review your Directed Project and participate in the final oral exam. Your initial advisor will help you to become acquainted with potential faculty members to serve on your advisory committee.

The advisory committee consists of three members of the graduate faculty. The major professor and at least one other member should be from the School of Engineering and Technology graduate faculty. The third member may represent a related subject area from your Plan of Study. This member must also be a member of the Purdue University graduate faculty. Members of the committee do not need to be faculty with whom you have taken course work.

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

A co-advisor may be designated when advantageous. If your Plan of Study and/or Directed Project would be significantly improved by the expertise of a faculty member or a person outside of the university, you and your major professor may request consideration for special certification for such service. Such requests require a rationale and description of the expertise. Route the request to the Purdue Graduate School via the School of Engineering and Technology Graduate Programs Office (ET 215).

If possible, begin selecting your advisory committee during your first term and be sure it is complete by the

end of your second term if you are a full-time student. The committee will help you develop the Plan of Study and review/approve your directed project proposal which must be approved before you may begin work on the project.

The TLC Department recommends that if you plan to create a Directed Project that you sign up for an Independent Study course (OLS 58100) with your advisor during the semester before you complete the Directed Project. During that Independent Study course, in consultation with your advisor and advisory committee, you will

- survey the relevant scholarship,
- design the study,
- secure Institutional Review Board approval (if applicable), and
- create a proposal for the Directed Project and submit it to the Advisory Committee for approval.

During the semester when you enroll for Directed Project credit hours, you will

- carry out the proposed project,
- analyze the results, and
- create a report that you will defend three weeks before the end of that term.

7. Completing the Plan of Study and Preparing for Graduation

The Plan of Study for Purdue degrees is unique to each student's interests and goals.

To enable an individually tailored program, each master's degree Plan of Study consists of Primary (core) courses and Related courses. See the online Instructions.

Thinking about the Plan of Study ideally begins when you register for your initial courses. Your advisor will discuss your background, interests, and degree objectives as you prepare for the first term of enrollment. The advisor will also recommend possible related courses.

The online Plan of Study form must include all courses you will take to meet the degree requirements. 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.

(Do not include more than 33 credit hours on the Plan, even if you intend to take courses beyond the degree requirements.)

Your advisor and (each member of your advisory committee if you have one) and you will sign the Plan of Study online. After review, the Dean for Graduate Studies also signs the plan. The plan is then submitted to the Graduate School for formal approval.

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

To make changes to the committee and/or courses after Plan of Study is approved, see these instructions for updating the Plan; the latest you can make changes is by the end of your second-to-the-last term before graduation.

Completing Core Course Requirements (Primary)

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

- OLS 50701 Quantitative Analysis & Analytics for Leaders **or** FMGT 53500 Measurement & Evaluation in Industry & Technology.
- TCM 51000 Effective Workplace Technical Communication **or** CIT 50801 Quality & Productivity in Industry & Technology **or** OLS 53010 Mixed Methods Research
- OLS 57100 Advanced Project Management

If you need an exception to these courses, discuss acceptable substitutes with your advisor.

Completing Related Area Requirements

Each Plan of Study must include 24 credit hours of courses from your Related area. Related area courses are based on your Concentration (such Organizational Leadership or Technical Communication), electives, and/or area of focus.

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

Include courses in the Plan of Study only at or above the 500 level.

Independent Study credit
You may include a maximum of 6 hours of independent study credits in your Plan of Study. In addition to including the course number (OLS 58100), include a different name for each independent study course.

Determining if Other Courses Can Be Included in Your Plan of Study
In addition to the courses you plan to take while earning the MST, you may be able to include in your Plan of Study courses you have already taken. These additional courses may include:

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

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

Details about each of these categories follow.

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

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

Including Transfer Credits in Your Plan of Study
In your Plan of Study, you may include a maximum of half the required course credit hours (15) earned at another accredited institution (12 maximum) and/or from non-Purdue schools at IUPUI.

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 earned degree, and
- must have been completed with a grade of "B" or better.

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

Grades from transfer courses will not be included in computing the graduate GPA.

Your advisor and the Chair of TLC Graduate Programs must approve including these courses in your Plan of Study.

Including Graduate Non-Degree Credit (Post-Baccalaureate Registrant Credit)
The Graduate School offers an option for graduate non-degree status (GND) to enable people who have earned a bachelor's degree to enroll in graduate courses without being officially admitted to a graduate program.

You can include a limited amount of credit earned in this category on your Plan of Study at the discretion of the advisory committee, the recommendation of the Assistant Dean for Graduate Studies, and the approval of the Graduate School. Typically, you can include a maximum of 12 term hours of GND graduate credit in your Plan of Study. To include a course, you must have earned at least a B in it.

Preparing and Filing the Master's Plan of Study
When you complete about 15 credit hours toward the MST, contact your advisor for assistance in preparing the Master's Plan of Study online.

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

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

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

1. Review relevant sections of this handbook to determine the requirements for the option (concentration, focus area, and/or certificate as well as direct project option or course- only option) you wish to pursue. In consultation with your advisor, 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. Activate your Purdue Career Account if you have not already done so. Instructions for doing so are contained in an e-mail you received several months after admission. (If you can't find this information, get in touch with your advisor.)
3. Prepare a draft of your Plan of Study, following the Instructions
    a. Indicate courses in your primary (core) area with a "P" in the left column labeled "Area." List primary area courses together as a group. (Primary courses are the core courses listed in section 4.
    b. Indicate related area courses with an "R" in the "Area" column. List related area courses together as a group.
4. Confer with your advisor for advice on the Plan of Study and their informal agreement to the plan before you submit it in a final format.
5. If you are completing a Directed Project, in consultation with your advisor, select two additional faculty members to serve on your graduate advisory committee (see section 6 of this handbook).
6. When you have a draft of the Plan, save it, and ask your advisor to review it.
7. After making revisions based on your advisor's feedback, submit it for formal review.

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

After the Plan of Study is officially approved, if you wish to make changes, follow the instructions for changing an approved Plan of Study.

Applying for Graduation

In your second-last term, apply for graduation according to the following schedule.

- For May graduation, apply by October 15
- For December graduation, apply by May 15
- For August graduation, apply by January 15

If you are pursuing a certificate in addition to the MST, complete an application for each credential.

MST Graduation Application
Certificate Graduation Application

Registering for Your Final Term

In the final term indicated on your Plan of Study

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

If graduation is cancelled or postponed, in subsequent term(s)

- Enroll in at least 1 credit of fee-bearing coursework, i.e., a regular course(s) or a directed project,
- Register for CAND 99200 to declare your status as a "candidate for a degree"

Warning! If you do not register for CAND 99100 by the deadline, the IUPUI Graduate Office may charge you a $200 fee for late registration.

8. Overall Master's Degree Procedural Checklist

This checklist will help you map a path through the MST. This checklist provides an overall picture of the process; for details, see the other sections of this handbook.

Deadlines will be emailed each term to all MST graduate students each term and are available from the School of Engineering and Technology Graduate Office or from the E&T Graduate Programs Office website.

Prior to the First Term

1. Be aware of admission condition(s), if any, which must be satisfied.
2. Read this graduate handbook carefully.
3. Contact your advisor to discuss your career and educational objectives and consider a preliminary Plan of Study.
4. Register for classes. See the enrollment packet that you received after admission for instructions on how to register. In addition, complete the steps needed for obtaining an ID card, an e-mail account, and a parking permit, if needed. Instructions for doing so are also included in the packet.

Succeeding Terms

1. Select an advisor/major professor and, if you will be completing a Directed Project, at least two graduate faculty members for your advisory committee.
2. Activate your Purdue Career Account, following the instructions you receive via e-mail several months after admission.
3. Discuss the preliminary Plan of Study with your advisors (and each of the members of the advisory committee if you have one.)
4. Submit a draft Plan of Study to your committee members.
5. Refine the Plan of Study, if needed, based on the advisor's or committee's suggestions.
6. If you have admission condition/s, ensure that you have met the condition/s.
7. Submit your final Plan of Study using the instructions. Submit it before the end of your second-last term, or the Graduate Office may charge you a $200 late fee.
8. Identify a tentative Directed Project if you are pursuing this option.
9. Register for classes for the next term. This opportunity is usually available about halfway through a term.
10. If you are completing a Directed Project, in your second-last term, enroll in an Independent Study course (OLS 58100) with your advisor to prepare for the Directed Project which you will typically complete in your last term.
11. Apply for graduation near the start of your second-last term using the application form for the MST. Watch for the deadline; it comes early in the term.

Final Term

1. Register for the remaining courses on your Plan of Study.
2. Register for *Candidacy CAND 99100* to declare your status as a "candidate for degree" plus a minimum of one credit hour of a fee-bearing course. CAND 99100 is a "no credit, no cost" registration. (CAND 99200 and 99300 may only be used in exceptional cases with approval of the IUPUI Graduate Office.) If you register late for the CAND course, the IUPUI Graduate Office may charge you a $200 late fee.
3. Defend your Directed Project at least three weeks before the end of the term if you have chosen that option.

9. Department of Technology Leadership and Communication Degree and Certificate Information

Core Requirements

The Department of Technology Leadership and Communication (TLC) offers you opportunities to acquire the necessary knowledge, skills, and abilities to make data-guided decisions in an increasingly diverse, global, and interdisciplinary world. Courses in quantitative and/or qualitative research methods, project management, technical communication, and/or quality and productivity are included in the TLC required core courses for the MST, as detailed in this section.

In addition to the MST with a Concentration in either Organizational Leadership or Technical Communication, you may also choose to earn the Human Resource Development Certificate, the Project Management Certificate, or the Certificate in Engineering Leadership. Details for each certificate are located later in this section.

The table below presents required and related coursework requirements for TLC MST programs.

Credit Hour Requirements	**Course Only Option**	**Directed Project Option**
Required Core Technology Courses (Primary) • OLS 50701 Quantitative Analysis & Analytics for Leaders **or** CIT 50700 Measurement & Evaluation in Industry and Technology • TCM 51000 Effective Workplace Technical Communication **or** FMGT 53500 Quality and Productivity in Industry & Technology **or** OLS 53010 Mixed Methods Research • OLS 57100 Advanced Project Management	9	9
Courses in a Related Area of Study	24	21
Directed Project (OLS 59800)	None	3
Total Credits	**33**	**33**

These core courses may be offered online, partially online (hybrid), or in face-to-face formats. Details for a specific term are available in the campus Schedule of Courses.

Each course is worth three credit hours.

Core MST course descriptions (Primary courses)

OLS 57100	Advanced Project Management in Technology	This course enables the student to learn project management through the application of project approaches in a team-based setting. Through the application of project tools and templates, the student learns the project life-cycle approach as demonstrated through actual and simulated project situations. The course presents the terms and approaches used in industry today and allows the student to apply these methods through both individual and team-based settings.
TCM 51000	Effective Workplace Technical Communication	This course applies principles of professional technical communication in industrial, technological, and business settings, with emphasis on adapting to organizational audiences, selecting, and organizing ideas, managing communication projects, and communicating clearly and effectively.
OLS 53010	Mixed Methods Research	The purpose of this course is to provide an overview of mixed methods research. It is designed for students who are interested in integrating qualitative and quantitative methodologies into singular or sequential research studies or programs of inquiry. The overview includes the philosophy and evolution of mixed methods research, purposes and characteristics of mixed methods research, research designs and corresponding questions and data analysis techniques.
CIT 50700	Measurement & Evaluation in Industry & Technology	An introduction to measurement strategies in industrial, technical, and human resource development environments. The evaluation of measurement outcomes will be the primary focus of the course.

FMGT 53500	Quality & Productivity in Industry & Technology	This course examines the process optimization utilizing contemporary quality and systems engineering methodologies, specifically Six Sigma, Lean, Toyota Production System (TPS) and Constraint Management. Direct application of principles to an industry field project is required. This course covers optimization and management of production, service, and transactional processes. Prerequisite: TECH 50700 or instructor permission.
OLS 50701	Quantitative Analysis & Analytics for Leaders	This course emphasizes the use of statistical analysis in critical decision making. Specifically, the course focuses on selecting data and running appropriate statistical analyses, synthesizing findings based upon the analyses, making decisions based upon the findings, and using multiple modes to present the data, the findings, and recommendation(s) for action.

Concentrations within the MST

Concentrations within the MST offer an opportunity to specialize in an area that fits your career goals. After graduation, the Concentration will appear on your transcript (but not on the diploma).

TLC offers two Concentrations, one in Organizational Leadership and one in Technical Communication, as described below.

Organizational Leadership Concentration

Leadership in science, technology, engineering, and mathematics (STEM) is important to organizational competitiveness, sustainability, and success. The MST Concentration in Organizational Leadership (OL) provides opportunities for students who desire leadership roles in business, government, or industry. Specifically, the objectives of this concentration are:

- To provide a program that generates and disseminates knowledge about leadership within the context of STEM expertise
- To make sure that graduates possess the knowledge, skills, abilities, resources, and perspectives necessary to be effective leaders in STEM and STEM-related professions
- To enhance economic opportunities for graduates and the organizations where they are employed
- To engage in research, scholarship, and creative endeavors that add knowledge to the discipline of leadership

Courses in leadership theory and application, ethics, managerial training and development, organizational change, coaching and mentoring, project management, conflict management and coaching, international leadership, sustainability, and related leadership development areas will be available to students who choose the Leadership Concentration. The table below provides an overview of core and related courses that students in this focus area take.

Requirements for an Organizational Leadership Concentration

Core Course Requirements (Primary)	**Core Credit Hours**
• CIT 50700 Measurement & Evaluation in Industry and Technology **or** OLS 50701 Quantitative Analysis & Analytics for Leaders • FGMT 53500 Quality and Productivity in Industry & Technology **or** TCM 51000 Effective Workplace Technical Communication **or** OLS 53010 Mixed Methods Research • OLS 57100 Advanced Project Management	9

The remaining courses for the OL Concentration will include five Concentration courses and three relevant electives (24 credit hours beyond the Core):

OL Concentration *Directed Project optional.*	*Hours*
OLS 57400 Managerial Training & Development *Spring*	3

OLS 50100 Leadership Ethics *Spring*	3
OLS 58000 Interpersonal Skills for Leaders *Fall*	3

OLS 58200 Leadership and Organizational Change *Fall*	3
OLS 58300 Coaching & Mentoring in Organizations *Spring*	3
Relevant Elective	3
Relevant Elective	3
Relevant Elective	3
CAND 99100 Candidate	0

You may choose electives from additional OLS, TCM, or other relevant graduate courses on campus.

Technical Communication Concentration
With the expanding sophistication of the processes and technical requirements of Technical Communication, the need for technical communicators who have expertise in communication and a solid foundation in technology and technical concepts is growing.

An MS in Technology with a focus area in Technical Communication prepares graduates for roles such as

- Technical Writer/Communicator
- Technical Editor
- Usability Specialist
- Web Designer
- Multimedia Content Developer
- Technical Trainer
- Technical Communication Manager

Requirements for a Technical Communication Concentration include:

Core Course Requirements (Primary)	**Core Credit Hours**
• OLS 50701 Quantitative Analysis & Analytics for Leaders **or** CIT 50700 Measurement & Evaluation in Industry and Technology • TCM 51000 Effective Workplace Technical Communication **or** FGMT 53500 Quality and Productivity in Industry & Technology **or** OLS 53010 Mixed Methods Research • OLS 57100 Advanced Project Management	9

The remaining courses for the TCM Concentration will include three Concentration courses and five relevant electives (24 credit hours beyond the Core):

TCM Concentration *Directed Project optional.*	*Hours*
TCM 53000 Advanced Visual Technical Communication *Spring*	3
TCM 54000 Advanced Managing Document Quality *Fall*	3
TCM 55000 Advanced Research Approaches for Technical & Professional Communication *Spring*	3
Relevant Elective	3
Relevant Elective	3
Relevant Elective	3
Relevant Elective	3
Relevant Elective	3
CAND 99100 Candidate	0

In addition to the core courses and Concentration courses, you may take elective TCM courses such as

- Effective Workplace Technical Communication (TCM 51000)
- Teaching Technical and Professional Communication (TCM 52000)
- Preparing for Career Transitions: Creating an ePortfolio (TCM 50500)
- Engineering and Scientific Communication in Academic Contexts (TCM 56000)

You may also take OLS courses or relevant graduate courses from other departments and schools as electives.

Focus Area
A focus area includes coursework related to a specific discipline or topic in addition to the MST core courses. A focus area does not appear on your final transcript, but it provides you with a flexible plan of study to fit your interests and goals. You can customize your focus area in consultation with your advisor.

Human Resource Development Certificate (12 credit hours)
The TLC department offers a graduate certificate in Human Resource Development (HRD). This Certificate will provide you with skills that qualify for specialized professional and managerial positions, such as:

- HR/HRD generalist with early career experience
- Manager or supervisor of training/HRD related functions
- Government employee involved in workforce/career related areas
- Nonprofit training/HR/HRD professional
- Current or aspiring consulting firm employee
- Training professionals/specialist
- Manager/executive interested in employee and organizational development

The Graduate Certificate in HRD requires 12 credit hours, including three required courses (9 credit hours total) and one elective (3 credit hours total).

The table below provides an overview of the requirements for the graduate Certificate in Human Resource Development.

Course Requirements – Human Resource Development Certificate	**Credit Hours**
Required Core Courses • OLS 57400—Managerial Training and Development (3 credits) • OLS 51500—Foundations of Human Resource Development (3 credits) • OLS 58200—Leadership and Organization Change (3 credits)	9
Elective (see note)	3
Total Credits	**12**

Note: The elective must be three credit hours of graduate level coursework from the Purdue School of Engineering and Technology or another IUPUI school or graduate program. Your advisor must approve this course, and it must be appropriate for the HRD Certificate.

To apply for admission to the HRD Certificate program, submit

- The IUPUI Graduate Admissions Application found at https://graduate.iupui.edu/admissions/apply.html
- A statement of your purpose and goals
- Evidence of an undergraduate degree with at least a 2.75 GPA
- One letter of recommendation

You may earn this certificate while earning the MS in Technology. Courses will count toward both the MS degree and the HRD Certificate if you finish the Certificate first or if you finish both at the same time. Both the degree and the certificate will appear on your transcript after graduation.

If you are applying for admission to the HRD Certificate and the MST at the same time, see a TLC advisor for details on how to do so.

Project Management Certificate (15 credit hours)

Earning the graduate Project Management (PM) Certificate at IUPUI will provide you with strong preparation in the foundations of project management knowledge and skills for positions such as

- Project Manager
- Financial Manager
- Market Research Analyst
- Software Developer
- Software QA Analyst
- Tester
- Management Analyst
- Supply Chain Manager
- Computer and Information Systems Manager
- Computer Systems Analyst
- Construction Manager
- Marketing Specialist

Course Requirements – Project Management Certificate	Credit Hours
Required Core Courses • OLS 57100 – Advanced Project Management in Technology **or** INFO-B 505 Informatics Project Management (3 credits) • OLS 57200 –Integration of Project Management for Leaders (3 credits) *Prerequisite: OLS 57100 or INFO-B 505* • OLS 58200—Leadership & Organizational Change **or** SPEA-V 513 Managing Change & Organizational Development (3 credits) • TCM 51000 – Effective Workplace Technical Communication **or** TCM 54000 Advanced Managing Document Quality (3 credits)	12
Elective – advisor approved	3
Total Credits	**15**

Note: The elective must be three credit hours of graduate level coursework from the Purdue School of Engineering and Technology or another IUPUI school or graduate program. Your advisor must approve this course, and it must be appropriate for the PM Certificate.

You may earn this certificate while earning the MS in Technology. Courses will count toward both the MST degree and the PM Certificate if you finish the Certificate first or if you finish both at the same time. Both the degree and the certificate will appear on your transcript after graduation.

If you are applying for admission to the PM Certificate and the MST at the same time, see a TLC advisor for details on how to do so.

Certificate in Engineering Leadership (15 credit hours)

Earning the Certificate in Engineering Leadership (CEL) at IUPUI will provide you with strong preparation in the foundations of engineering leadership knowledge, skills, and abilities. This Purdue University certificate will supplement an already-earned bachelor's degree from a variety of science, technology, engineering, and mathematics (STEM) disciplines.

The CEL will enhance your existing professional work and prepare you for specialized positions such as

- Introductory and Senior Level Engineering Manager
- Intellectual Property Team Leader
- Design Patent Leader
- Quality and Productivity Leader
- Engineering Consultant
- Design Leader
- Product Lifecycle Manager
- Engineering Sales Manager
- Management Analyst
- Supply Chain Manager
- Computer & Information Systems Manager
- Computer Systems Analyst
- Construction Manager
- Leader – Training & Development
- Operations Manager
- Senior Maintenance Engineer
- Senior Safety & Compliance Engineer

The CEL curriculum includes four required courses and one graduate elective course for this post-

baccalaureate credential.

Course Requirements – Certificate in Engineering Leadership	Credit Hours
Required Core Courses • OLS 57100 – Advanced Project Management in Technology (3 credits • OLS 58200—Leadership & Organizational Change (3 credits) • TCM 51000 – Effective Workplace Technical Communication (3 credits) • ME 55401 Design for Intellectual Property Protection & Commercialization (3 credits)	12
Elective – advisor approved	3
Total Credits	**15**

TLC Graduate Course Descriptions

TLC offers the follow courses; each is worth three credit hours unless indicated otherwise.

Many of these courses are offered online, partially online (hybrid), or in face-to-face formats. Details of course offerings for a specific term are available in the campus Schedule of Courses.

Organizational Leadership courses

OLS 50100	Leadership and Ethics	An examination of ethical, legal and policy issues facing business and technology leaders. Topics include ethical decision-making, corporate social responsibility, codes of ethics, public policies and government regulations, international business practices, technology innovation, risk management in a global environment, and specific areas of law-employment, health, and safety, environmental, contract, warranties and liabilities, intellectual property, technology law, and international laws and regulations. This course uses the case study method and involves active discussion and debate.
OLS 50701	Quantitative Analysis & Analytics for Leaders	This course emphasizes the use of statistical analysis in critical decision making. Specifically, the course focuses on selecting data and running appropriate statistical analyses, synthesizing findings based upon the analyses, making decisions based upon the findings, and using multiple modes to present the data, the findings, and recommendation(s) for action.
OLS 51500	Foundations of Human Resource Development	A survey course emphasizing the human resource function (ant its development) in the context of the work organization. Human resource development topics include exploration of various training and development techniques, the relation of training to organizational strategies, training needs analysis, evaluation of training, and career development. The strategic approach to human resource management also is covered, including what human resource professionals can and should do to help the organization succeed.
OLS 51600	Leadership for Diversity, Equity, & Inclusion	This course will assist students in identifying and understanding diversity, equity, and inclusion issues in the workplace. Students will engage with various theories and concepts related to workplace and societal diversity, equity, and inclusion and apply them to organizational settings.
OLS 53010	Mixed Methods Research	The purpose of this course is to provide an overview of mixed methods research. It is designed for students who are interested in integrating qualitative and quantitative methodologies into singular or sequential research studies or programs of inquiry. The overview includes the philosophy and evolution of mixed methods research, purposes and characteristics of mixed methods research, research designs and corresponding questions and data analysis techniques.
OLS 57200	Integration of Project Management for Leaders	This course emphasizes critical analysis, synthesis, and evaluation of theories and applications of project management knowledge and skills, leadership, communication, and stakeholder engagement. Students integrate theoretical and applied skills in planning, distributing, and managing communication; analyzing and interpreting project organization in context; and applying best practices in team management.
OLS 57400	Managerial Training & Development	Review of current managerial education and development theories and practices; discussion of fundamental social, economic, and political changes affecting business and the work of managing; implications of these changes for individual manager development and continued growth.
OLS 58000	Interpersonal Skills for Leaders	Development and improvement of interpersonal dynamic skills for effective leadership in organizations. Emphasis on action learning and real-world application of skills.

OLS 58100	Workshop in OLS (variable credit hours)	Courses using this number may cover special topics, an independent study, or a directed project.
OLS 58200	Leadership & Organizational Change	This course explores issues in leadership and organizational change. Included are change theories, utilizing resistance to change, contemporary approaches to change, the future workplace, and researching best practices in organizational change.
OLS 58300	Coaching & Mentoring in Organizations	This course explores issues and practices in technologically driven organizations pertaining to the roles and functions that coaching and mentoring play in employees development. The focus of the course is on identifying coaching opportunities, enhancing communication skills, developing and implementing coaching and mentoring strategies, and evaluating the outcomes of these strategies.
OLS 59800	Directed MS Project (variable credit hours)	A formal investigation of a particular issue or problem under the guidance of the Directed Project Chair and Advisory Committee.

Technical Communication Courses

TCM 50500	Preparing for Career Transitions: Creating an ePortfolio	The purpose of the course is to help graduate students to reflect on their work and to present evidence of their knowledge, skills, and professional attributes to prospective employers. Abilities to reflect and present apply throughout one's career in rapidly changing workplace contexts. In this course, students will learn about the role of e-portfolios in presenting work to prospective employers, reflect on their goals and abilities, and learn principles of effective e-portfolio design.
TCM 51000	Effective Workplace Technical Communication	This course applies principles of professional technical communication in industrial, technological, and business settings, with emphasis on adapting to organizational audiences, selecting, and organizing ideas, managing communication projects, and communicating clearly and effectively.
TCM 52000	Teaching Technical and Professional Communication (3-4 cr.)	This course is intended for graduate students who wish to learn the theory and practice of teaching technical and/or professional communication at secondary or post-secondary levels.
TCM 53000	Advanced Visual Technical Communication (3-4 cr.)	This course is intended for graduate students who wish to learn the theory and practice of visual technical communication.
TCM 54000	Advanced Managing Document Quality (3-4 cr.)	Students examine and apply principles of creating a technical or professional publication from start to finish. Students also explore and practice publication quality management issues such as planning, researching audience and content, designing the publication, drafting, obtaining reviews, conducting usability testing, and negotiating within organizational cultures.
TCM 55000	Advanced Research Approaches for Technical & Professional Communication (3-4 cr.)	This course is intended for graduate students who wish to learn the theory and practice of conducting applied research in technical and/or professional communication.
TCM 56000	Engineering & Scientific Communication in Academic Contexts.	This course is designed to help students develop the reading, writing, and speaking skills necessary for academic success as engineering and science graduate students. In this course, we analyze examples of written documents and oral presentations to determine how they are structured and what kinds of claims and evidence they use. Students will simulate these presentations and write similar documents to gain practical experience for successful writing and speaking in academic engineering and scientific contexts.

Additional courses are in the process of being approved, so check the campus Schedule of Courses for details about course offerings in a specific term. Courses in the process of being approved will be offered with the OLS 58100 Special Topics designation.