

School of Engineering Technology



School of Engineering Technology Graduate MS Program Handbook November 2022

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Engineering Technology Graduate Student Handbook

Welcome

Welcome to Purdue University and the School of Engineering Technology! The graduate faculty are delighted that you will be joining our program. The graduate faculty are excited to be a part of your professional journey. The purpose of the handbook is to acquaint you with the graduate policies (which you are accountable) and the School of Engineering Technology at Purdue University.

All graduate programs at Purdue University are under the jurisdiction of the Graduate School. As a student of the Graduate School, you are held accountable to standards maintained across the university. These standards include grade point average, course credit, plan of study format, advisory committee structure, vacation policy, registration, and residency requirements and behavior. Under University Graduate School guidelines, the School of Engineering Technology (SoET) has a Graduate Committee and Chair that reviews programs and establishes SoET guidelines and policies which are presented in this handbook.

The SoET graduate committee believes you will find your journey meaningful and intellectually challenging. The SoET graduate faculty encourage you to take advantage of the vast resources and opportunities available to you at Purdue University as you strive to reach your professional and personal goals. If you have any questions or need further information, please contact Senior Graduate Program Administrative Assistant Niedra McLeland at nmclelan@purdue.edu.

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1. Master's Degrees

All applicants are required by the Graduate School to hold a bachelor's degree from an accredited college or university of recognized standing prior to registration. The applicant is presumed to have achieved a grade point average of 3.0 or higher.

Master of Science (MS) programs are directed by professors who work in close association with the graduate student. Your MS plan of study is composed of required and formal courses and guided individual study in a chosen field or discipline. Additionally, study in related subjects as required by the candidate's major professor and/or advisory committee. Your creation of original research serves as the basis of a scholarly thesis or capstone directed research project. Master of Science applicants for on campus programs require the following materials:

- Transcripts from all universities or post-secondary institutions attended
- GRE scores are currently optional at time of handbook publication (November 2022)
- Statement of purpose (why graduate school, why Purdue SoET, how are you qualified, SoET faculty with whom you have spoken and want to work with, research topic you want to pursue, and what you want to do with the degree after graduation)
- Diversity Statement (optional)
- Resume
- Three letters of recommendation from individuals who can independently evaluate the applicant's ability to write effectively, demonstrate proficiency to work independently, conduct research, and follow directions.

A thesis-based MS degree requires 21 credit hours of coursework and minimum of (9) credit hours of thesis research (ECET/IET/MET 69800). The student's work culminates in a written thesis. Student's pursuing a MS thesis-based are required to complete the following courses in the preferred sequence: ENGT 50100 (Research Seminar), MET 50300 (Applied Optimization), graduate-level statistics course, MET 52700 (Tech from a Global Perspective), and TECH 64600 (Research Methods and Writing Selective).

A non-thesis, capstone directed research project is an MS degree requiring 30 credits of coursework with a minimum of 6 credit hours of research (ECET/IET/MET 59800). The capstone directed project was originally defined as an applied research project that was more extensive and sophisticated than a graduate-level independent study and less formal than a master's thesis. However, the format of the capstone directed research project follows the same SoET thesis checklist (formatted just like a thesis and with a scheduled final oral defense presentation). The overall objective of the requirement is to engage each graduate student in a study, typically industry or business focused, which was sufficiently involved as to require more than one semester to conceive, conduct, and report. The focus of the project is typically a problem with practical implications rather than original, basic research. Students are required to complete the following courses having the following preferred sequence: ENGT 50100 (Research Seminar), MET 50300 (Applied Optimization), a graduate-level statistics course (see list of recommended statistics courses in Appendix H, MET 52700 (Technology from a Global Perspective) and then TECH 64600 (Analysis of Research in Industry and Technology).

A non-thesis coursework-only MS degree requires 30 credit hours. Students are required to complete the following courses: ENGT 50100 (Research Seminar), MET 50300 (Applied Optimization), graduate-level statistics course, and MET 52700 (Technology from a Global

Perspective). Of important note is students cannot include credit for more than one of the following courses: IET 50700, STAT 50100 or STAT 51100 for a core requirement. One of these three courses can serve as an initial statistic course.

Admission to the Graduate Program at the master's level is restricted to those with an admirable undergraduate record who demonstrate potential for graduate education success through writing and research.

Online Master's Degree

The Online Master's in Engineering Technology is designed for full-time working professionals having an undergraduate degree in engineering, engineering technology, science, information technology or business. The program is uniquely equipped to prepare the full-time working professional for a variety of upwardly mobile engineering, technology, and science-based careers. Of important note, the online degree program for example, is not to prepare the student to be a theoretical engineer and shouldn't be confused with a graduate degree in engineering science. The online degree program requires a total of 30 credit hours to complete the plan of study requirements. Six credit hours within the plan of study require a capstone directed research project written by the student. The capstone directed research project (CDRP) is written and formatted like a thesis, but having a focus to solve a business, industry, or governmental problem or challenge. The CDRP answers a given workplace or technology problem in five written chapters as a thesis to contribute knowledge or a solution. The CDRP must also demonstrate a return on investment tied to the research problem statement of the study. Applicants are required to submit the following materials:

- Transcripts from all universities or post-secondary institutions attended
- Statement of purpose (why graduate school, why Purdue SoET, how are you qualified, how does the presented graduate program related to your current and future full-time employment, research topic you want to investigate, measure, and academically write up, and what you want to do with the degree after graduation)
- Diversity statement (optional)
- Resume
- Three letters of recommendations (individuals who can judge your ability to be successful in graduate course expectations, perform timely and deliver professional results, work independently to conduct research and write an entire five-chapter CDRP)

For more information regarding the program visit, <u>https://online.purdue.edu/programs/engineering/polytechnic-masters-in-engineering-technology/courses</u>

A graduate of the Engineering Technology program will be able to solve business and industry challenges using existing sciences and technologies and merge knowledge, art and skill to develop and impact the deployment of solutions to complex, real-world problems in manufacturing, technology and many other fields or professions. The degree program builds an excellent foundation to move up and expand your responsibilities in your current organization or next career move.

BS/MS Dual Degree

The SoET's Dual BS/MS Degree Programs are restricted to undergraduate students with a 3.0 or 3.2 (MFET) GPA or higher academic standing depending on the undergraduate program. Application and admission to the Graduate School are required, and the standard Graduate

School application process is to be followed. The degree can be referred to as an early admission program. Students desiring admission into SoET's Dual BS/MS Degree Program can apply to the Department's Graduate Programs Committee as early as their junior year (Semester 5). However, potential applicants are expected to discuss details with their undergraduate academic advisor, first. If the student decides to move forward after discussing with their undergraduate academic advisor and potential MS committee chair, all applicants are required to submit the following materials:

- Transcripts from all universities attended
- Statement of purpose (why graduate school, why Purdue SoET, how are you qualified, SoET faculty with who you have spoken and want to work with, research topic you want to pursue, and what you want to do with the degree after graduation)
- GRE scores, optional this point in time (November 2021) with publication
- Diversity statement (optional)
- Resume
- Three letters of recommendation from individuals who can independently evaluate the applicant's ability to write effectively, demonstrate proficiency to work independently, conduct research, and follow high level directions individually.

The primary purpose of admitting outstanding undergraduate students into the MS degree program is to provide the opportunity to make an early start on thesis research. Dual degree students are allowed to enroll in graduate courses and earn course and research credits towards their master's degree while completing their bachelor's. Before the baccalaureate degree is awarded, any course and/or research credits taken to satisfy the graduate degree requirements must be designated as undergraduate excess credits on the appropriate university form. Students can complete up to **nine** credit hours while they are still completing their B.S. degree to count towards the MS degree. Dual counted credits must be B- or better. Students must meet all requirements for the baccalaureate degree, which must be awarded before the student is eligible to earn the graduate degree. All students are assigned, or will select, a faculty mentor/thesis advisor upon entering the program. Required graduate course work will follow either the thesis, directed project, or course work only sequence depending upon student's professional objective. Note, ENGT 501 needs to be taken in the fall semester.

Dual degree BS/MS students can be eligible for teaching or research assistantships including fellowship support after admission to the Graduate School if they are planning to complete a thesis or directed project.

<u>O&A for Frequently Asked Questions Regarding Course Selection for Dual Degree</u>

Question - If a student takes a 500-level course while in undergraduate status but that 500 level course is used to meet a specific undergraduate requirement such as an upper-level elective, can this 500 level course still be counted as a dual credit toward the masters? Additionally, does the 500 level courses that are taken while in undergraduate status have to be above and beyond the 120 credit hours necessary for the B.S. degree?

Answer - if this student in in an approved combined degree program (would have a Form 27 on file with the master's application), they can take up to 12 credits of 500-600 level coursework during their time of dual BS/MS enrollment to be used toward both degrees. These dual counted credits must be B- or better.

If the student is not in a combined program, s/he cannot dual count credits. However, they could take courses beyond the requirements of the undergrad degree with the expectation that these may be used only for a graduate degree in future. These are called Undergraduate Excess credits. Up to 12 credits of Undergraduate Excess credits may be used toward a graduate degree provided that these requirements are met:

The courses were 500-600 level

The courses were taken while the student had junior or senior standing

A B- or better was earned in the course

The course was not used for the undergraduate degree

Question - If the student, when in graduate status takes a 400-level course, must they also take the corresponding 500 level course for the 400-level course to be counted toward the graduate degree?

Answer - No; up to 6 credits of 300-400 level courses taken while a graduate student may be used on a graduate plan of study (provided a B- or better is received). As long as the 400- level course is on the GR transcript and the minimum grade requirement is met, the student should be able to. Confirm with the SoET graduate education administrative assistant.

Students admitted to a combined degree program may share up to 12 credits of 500-600 level (B- or better) coursework taken in undergraduate registration between the BS and MS degrees. These courses remain on the undergrad transcript but can be listed on the graduate plan as combined (CO). Up to 6 credits of 300-400 level coursework taken in graduate registration (i.e. listed on the graduate transcript) may be used on a graduate plan.

When students take courses to double count (while still enrolled as an undergraduate), these should be (safe bet) 500-level courses. Generally, using a 300- or 400- level required course taken while an undergraduate is discouraged. However, a maximum of 6 credit hours of 300- and 400- level course that can be applied to an MS degree.

Students cannot use undergraduate level (100-400 level) taken in undergraduate registration on a graduate plan. Up to 6 credits of 300-400 level taken as a graduate student can be used, but not as an undergrad. here has been an incidence that a 400-level research course (such as MET 49900) has counted when followed by additional research/coursework in that area.

Question - If an EET student were to take ECET 33900 Digital Signal Processing (as an undergrad) and then ECET 43900 Advanced DSP (as an undergrad) and then ECET 58100 Advanced DSP (as a graduate student), could all three be counted to the student's MS plan of study?

Answer - No, only ECET 58100 could be used.

Question - If a student takes a required course/selective as an undergraduate (e.g. MET 41100 Intro to Finite Element Analysis or MET 31601 Mechanics of Machine Design) and follows this up with another course roughly in that area. Could MET 41100 be counted? How about MET 31601?"

Answer - No, since undergraduate level courses taken in undergrad registration cannot be used on a grad plan.

1.1. Transferring to SoET from another Purdue University graduate program

<u>Requirements</u>

The student must meet the Graduate School's requirements in order to be considered by the SoET for a transfer from another Purdue department/school. The student's GPA must be at least a 3.0. The student needs to be from a discipline which closely aligns to work done in the SoET demonstrating knowledge of the field of engineering technology as well as explain how SoET is a good fit for them based on their research goals.

Materials needed to approve transfer

The student's admissions application will be reviewed by the SoET Graduate Committee and/or Chair. Transfer materials can be delivered by the student, or by the student's original department. The original department must approve the potential transfer, first. The following materials are required:

- completed Request for Transfer of Department form (GS-Form-17). https://www.purdue.edu/gradschool/documents/gpo/forms/GS-Form-17.pdf
- an unofficial Purdue transcript submitted by the student.
- statement of purpose for transfer will be written by the student, explaining the justification for the transfer, and explaining why SoET is an appropriate fit for the student.
- three letters of recommendation from individuals who can independently evaluate the applicant's ability to write effectively, demonstrate proficiency to work independently, conduct research, and follow directions.
- resume
- GRE scores optional as of November 2021
- TOEFL scores

Process of Assessment

Members of the SoET Graduate Committee and/or Chair will review the file and determine whether the transfer is appropriate for the student and for the department.

2. Major Professor

When admitted to Purdue, SoET graduate students need to have already chosen a major professor. If not, A volunteer **Mentor Team**, will be formed. The members of the **Mentor Team** will function as **an Initial Advisor (IA)** and will work with unpaired students or any other student that needs mentorship. Some important information about the **MentorTeam** is listed below:

- Volunteers submit their name to Niedra, who will keep a list of eligible mentors
- At the start of every semester, faculty wishing to opt-out must contact Niedra to be removed from the list. Niedra can send an email to all faculty on the list with "vote" buttons to stay on the list or to opt-out.
- Ms. McLeland will provide the list to **all unpaired students**. Students will then select an **Initial Advisor** from this list.
- Students may work with an IA for a maximum of <u>one semester</u>. If the student wishes, they may separate from their IA after one semester and select a different IA from the list (two maximum).

- Recommended responsibilities of the IA:
 - Help the student align with a **MP**
 - Help the student develop a plan of study
- Recommended responsibilities of students pursuing an MS Thesis Option:
 - Develop research questions
 - Develop research products
 - Actively seek a MP
- The IA may become the MP if both the student and IA agree to this arrangement. If not, the students will be initially assigned to one in a temporary capacity. The initial assignment is based on expressed research interest, the research programs of the faculty member, and the availability of, research funding.

3. Coursework and Plan of Study

3.1 Course Requirements

Master's Degree

Minimum requirements for the thesis-based program are 21 credit hours of graduate coursework beyond the BS level, and a minimum of nine hours of thesis research credits that contributes to knowledge in the field of research specialization. The non-thesis MS requires 30 semester hours of graduate work beyond the BS. For either the thesis or non-thesis option, courses taken in preferred order must include:

- Research Seminar (ENGT 50100)
- Three credit hour graduate level statistics course (see listing of statistic courses in Appendix K).
- Applied Optimization (MET 50300)
- Technology from a Global Perspective (MET 52700), then
- Analysis of Research in Industry and Technology (TECH 64600)

Coursework-only option students are NOT required to take TECH 64600, all other courses listed above are required. The plan of study must provide a well-balanced and integrated research program in support of the student's concentration or area of professional interest.

3.2 Plan of Study

Each graduate student admitted to the degree program MUST file a plan of study through the myPurdue portal before the end of the second semester of graduate work. The plan of study includes the specific courses the student is expected to complete. No courses that have S/U grades, such as research credits (59800 or 69800), shall appear on the plan of study. Thesis students must have at least 21 credit hours on their plan of study; non-thesis students must have a total of 30 credit hours. All students are required to have a B or better in SoET required courses. Only credit hours associated with graduate courses for which grades of B- or better were obtained will be eligible for transfer. Other courses used to fill the requirements of the plan of study require a C- or better. As a graduate student, <u>you must maintain</u> an overall 3.0 GPA in the SoET graduate program to maintain acceptance in the program. Committee chairs and students need to meet on a regular basis (every other week) throughout the semester to review, and plan for success. Course credits earned by a student whose graduate study and/or professional activity have been inactive for five years or more cannot be used in a plan of study for an advanced

degree. A plan of study approved prior to such a period of inactivity is invalid.

<u>Filing the Plan of Study</u>

The plan of study is filed electronically and must be completed by the student after his or her major professor has approved. The plan of study includes a primary area and related area(s) that are chosen on the basis of the student's interests and needs. The plan of study includes the specific courses the student is expected to complete and other requirements of the degree being sought. Research credits either for the thesis for directed project) (ECET/IET/MET 59800 or 69800) do NOT appear on the plan. Courses taken as pass/fail or satisfactory/unsatisfactory may NOT be included in the plan. All students are required to have a B- or better in the required core courses. The other courses used to fill the requirements of the plan of study require a C- or better. A 3.0 GPA must be maintained in the program to graduate. The initial Plan of Study must be finalized and submitted for approvals before the end of the second semester in a graduate degree program.

Credits from Another University

Credits earned at other universities may be applied toward an advanced degree at Purdue, but only if it can be proven that the specific credits were not used to meet requirements for another awarded degree. Please refer to the Graduate School's policies and procedures for Administering Graduate Student Programs (<u>https://catalog.purdue.edu/content.php?catoid=9&navoid=10510</u>) All transfer credits are subject to approval by the major professor and SoET or chair of the graduate committee. For a course to be considered, the student must provide a copy of the course syllabus to the graduate education administrative assistant. The committee or chair will review to determine appropriateness and validity for use in a given Plan of Study.

3.3 Course Recommendations

Recommended graduate (500-600) courses and course offerings for each area of interest in SoET can be found in the Purdue course catalog

(<u>https://selfservice.mypurdue.purdue.edu/prod/bwlkffcs.p_disp_dyn_ctlg</u>). The SoET MS program allows flexibility in the course's students take, depending on their research area and interests. Students can take courses outside the SoET school relevant to their research interests and with the approval of the major professor. When creating a plan of study and registering for coursework, students are expected to work with their major professor to ensure all degree requirements and research expectations are met.

3.4 Undergraduate Credit

A related area may include undergraduate courses (300- or 400-level) only when in "grad status" and followed by appropriate 500 or 600 level courses. A student must have the approval of the student's advisory committee and chair. 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, no more than six (6) semester hours of 300- and 400-level courses may be applied to graduate work and a grade of "B" or better is required. If an undergraduate course is taken while the students in non-degree status you will not be able to count the course on your plan of study.

3.5 Course Registration

For a degree to be granted by the Purdue University Graduate School, it is important for a significant component of that degree to be directed by Purdue graduate faculty; therefore, the following registration requirements exist. Registration is defined as formal enrollment in courses offered by Purdue University, including courses offered via distance learning technologies. Courses include all Purdue University graduate courses approved by the student's graduate committee, including formal coursework and research credits.

Registration for all students need to reflect the student's activity as accurately as possible. Any student must be registered for research during each semester or summer session when performing faculty-directed research or consultation, and/or requiring the use of University facilities. Research includes literature reviews and thesis writing. <u>Departmental policy requires that each graduate student supported by an assistantship (teaching or research) must be registered as a full-time student each semester.</u>

The minimum registration for full-time status is 8 credits per semester, or 6 credits in the summer. Students funded on a half-time research assistantship are required to be enrolled in a minimum of 6 credit hours during the fall or spring semester, and 3 credit hours in the summer. International students funded on a quarter-time assistantship must be enrolled for at least 8 credit hours to meet residency requirements.

Students completing a thesis or directed project (non-thesis) must be enrolled in a minimum of 9 credit hours of research ECET/IET/MET 69800 for thesis or a minimum of 6 credit hours of ECET/IET/MET 59800 for a directed project to complete the MS degree.

A maximum of 6 credit hours of independent study (ECET/IET/MET 59000) may be included in a plan of study. Independent study courses require the student and major professor to complete the independent study authorization form that can be found on our webpage (https://polytechnic.purdue.edu/sites/default/files/files/Independent-Study-Authorization-Form.docx). The completed form with major professor approval should be sent to the SoET Graduate Programs Administrator. Instructions on how to register for an independent study course can be found below.

Early registration is recommended. Late registration will result in additional fees.

Completing the Research Deliverables for Registration

The Graduate School requires that each student complete deliverables for each semester of research credit registration. The deliverables include general expectations agreed upon by the student and their major professor for the semester in question.

Within SoET, the research deliverables form can be found on our graduate webpage (https://polytechnic.purdue.edu/sites/default/files/files/Agreement-of-Deliverables.docx). The students' will work with their major professor to get the form completed and approved. The said research credit registration must be completed <u>BEFORE</u> the end of the second week of Class for a given semester. Students will register for the credits through the electronic registration system. After they register, the student must email the approved form to the Graduate Program Administrator from their @purdue.edu email account, copying their Major Professor, and requesting they respond with approval or edits.

Between the first day of classes and the end of the second week of each semester, faculty supervising research MUST login to myPurdue and complete the agreement for each of their students that are registered for research credits. Instructions on the process can be found at, (https://polytechnic.purdue.edu/sites/default/files/files/Faculty-Instructions-for-Agreement-on-Deliverables.pdf).

Registration for Independent Study Course Credits

Using an independent study course (ie, ECET/IET/MET) constitutes an agreement between a graduate faculty member and a student/group of students for individual/small group study of a special problem in a selected area. The number 59000 is used for independent study equivalent to an academic course and IS NOT TO BE used for core plan of study requirements. The independent study contract must be submitted to the SoET Graduate Program Administrator at least two weeks prior to the first day of classes of the semester in which the course is to appear. The contract is then sent to the Chair of the Graduate Committee for approval, which must be secured **prior to registration**. Approved copies will be distributed to the Academic Advisor and the 59000 Instructor.

How to request a Variable Title course: https://www.youtube.com/watch?v=TL P6UQuWdg

How to confirm the creation of a Variable Title course: <u>https://www.youtube.com/watch?v=aJSZoI_fDio</u>

Degree Registration and Billing Requirements

When registration is completed, fees and payment schedules will be posted on the myPurdue portal. As a Purdue graduate student, one of your responsibilities is to provide the correct mailing address for billing purposes to the Office of the Registrar, Bursar's Office, and SoET Graduate Administrator. Additionally, you MUST abide by all graduate school deadlines.

Students employed through an assistantship or fellowship receive tuition remission, which is processed by the SoET Graduate Office and the Bursar's Office. Refer to the <u>Graduate Staff</u> <u>Employment Manual</u> to see if your assistantship is eligible for benefits. Please note that some fees are NOT covered by tuition remission. For example, the Polytechnic Institute charges differential fees, and the university charges student health and wellness fees. For more information regarding fees paid by the students, and for information regarding payment plan options, please visit the Bursar's Office website. Tuition and fees can be estimated using the Tuition Calculator.

Registration and Holds

Registration will be prevented if you have outstanding holds on your account will prevent registration. To check a hold on your account, login to your myPurdue, and click on the Registration Tab. Within the orange "Register for Classes" box, click on the first link - "Do I have any holds?". Common examples of holds that will prevent you from being able to register or obtain official transcripts are:

- Immunizations All Purdue students must have their immunization records on file with Purdue University Student Health (often called PUSH). For office information, see Appendix J.
- **Financial Responsibility** The Division of Financial Aid requires all Purdue students to acknowledge and accept their responsibility for incurred charges. A Hold is placed on

every student account before spring registration opens each year. For office information, see Appendix J.

- Emergency Contact Purdue University requires each student list an Emergency Contact. The hold is also placed on every student's account before spring registration opens each year.
- **Outstanding Admission Conditions** (such as missing official transcripts or official diploma) Having the Hold could appear in the first semester. Graduate students who fail to provide official transcripts or certificates to the Graduate School upon their arrival to Purdue will have said conditions. The Hold means it is necessary to contact the Graduate School Admissions Office to fulfill an admission condition.

3.6 Grade Requirements for SoET Graduate Students

Graduate students are expected to perform at a B level or higher. Only grades of C- or better are acceptable in fulfilling graduate school requirements on any plan of study. No more than six credits of "C" grades will be accepted toward graduation. The SoET requires a performance and overall, of B- or better in the required plan of study required courses. Only credit hours associated with graduate courses for which grades of B or better were obtained will be eligible for transfer.

Please note: Pass/no pass grades are not acceptable in fulfilling degree requirements. All graduate degree candidates are expected to have a minimum of 3.0 overall (out of 4.0) grade point average (GPA) to graduate. The GPA is computed from all courses listed/taken on the plan of study. The student's progress is reviewed each semester by both the Graduate School and the SoET. If a student fails to perform on a level satisfactory to the major professor and student's graduate committee, or to the Dean of the Graduate School, he or she can be asked to discontinue graduate study. The same scholastic requirements are in effect during the regular university year also apply to graduate study during the summer session and/or in course work taken at the university's regional campuses.

A student who falls below the GPA expectations will be notified, in writing, by the Graduate Education Program Chair. The student will have one semester in which to raise his/her overall GPA above 3.0. If the GPA falls below 3.0, the student's grade report will be marked as "low" by the Graduate School and a hold will be put on the student's account. The student must raise their semester GPA above 3.0 the following semester or be dismissed from the program.

Graduate students who receive an incomplete grade in any course will have one year from the date the Incomplete was given to receive a completion grade. If that is not done, the Registrar's Office will convert the grade to failing (noted as IF on the official transcript). NOTE: A student cannot enroll in additional research credit hours until the incomplete research credit hours are satisfactory completed.

3.7 Resident Study Requirements

Resident study is defined as study done under approved supervision at the Purdue University-West Lafayette campus. The Graduate School has residence requirements that are intended to ensure each student has ample opportunity for close association with other scholars in the intellectual environment of Purdue University.

Master of Science Degree

- 1. At least one-half of the total credit hours used to satisfy degree requirements must be earned while registered at Purdue University.
- 2. More than 50 percent of the Purdue credits must be earned through the campus where the degree is conferred.
- 3. At least 30 total credit hours are required.
- 4. Note the exception of doctoral students who are re-classified as master's students and leave the Graduate School with the master's degree, 69900 credits may not be used towards the fulfillment of master's degree requirements.

Doctor of Philosophy Degree

The Graduate School requires that one-half of the total credits for the master's degree and onethird of the total credits for the Ph.D. degree be earned in residence at the Purdue University-West Lafayette campus. The SoET/PPI requires that one-half of the total credits for <u>each</u> degree be earned at Purdue University.

- 1. At least one-third of the total credit hours used to satisfy degree requirements must be earned while registered for doctoral study at Purdue University.
- 2. At least 90 total credit hours are required
- 3. A master's degree or professional doctoral degree from any accredited institution may be considered to contribute up to 30 credit hours toward satisfying this requirement at the discretion of the student's graduate program. (The intent of this policy is to provide colleges/schools, departments, and a student's advisory committee with flexibility in determining what credits, [up to a maximum of 30 and earned from the master's or professional doctoral degree] may be applied toward the Ph.D. degree. These credit hours are not subject to the "Five-Year Rule" that prohibits the use of out-of-date coursework on plans of study. See Section <u>VII-B-1-a</u>.).
- 4. Under no circumstances may 69800 credits, other than as part of the 30 credits which may be used from a master's degree, contribute toward the 90 credits required for a Doctor of Philosophy degree

If a student completes all academic requirements, but has insufficient residence credits, a letter of explanation must be initiated by the student's major professor and then approved by the SoET Graduate Education Chair. If the justification is met, the letter will be forwarded to the Dean of the Graduate School, justifying the deficiency. If the justification is sufficient, the Dean of the Graduate School may waive part of the residency requirement as an exception.

3.8 Reduced Course Loads for International Students

To maintain VISA status, international students are expected maintain a full-time load. Purdue's Office of International Students and Scholars (ISS) provides information about this requirement and offers a pathway for international students to request permission to take a reduced course load. Graduate students desiring a reduced course load must work with ISS to request this before their course load is reduced below that required by U.S. Immigration rules. See the ISS web site for more information: <u>http://www.iss.purdue.edu/</u>.

3.9 Dropping and Adding Courses

To drop or add a course, use myPurdue and navigates to the scheduling assistant from the

registration tab. When the request is completed, the system will notify the instructor and advisor for approval. During the first two weeks of the semester, students can drop a course via the scheduling assistant with no authorizations required. Courses dropped during the first two weeks of the semester, courses will not appear on the permanent record. Courses dropped during weeks three and four will be recorded as a "W" grade on the permanent record (withdraw) and require the advisor approval. Courses dropped during weeks five through nine require the approval of both the instructor and advisor. For such a case, the instructor must assign a grade of "W," "WF," or "WN." The end of this period is the final deadline for withdrawing from a class. Courses may be added during weeks five through nine, but only under extraordinary circumstances. Courses added after the fourth week require the approval of the instructor, advisor, and School/Department Head (where the course is offered for non-Polytechnic courses). Drop and add dates can be found at the <u>Office of the Registrar</u>.

4. Graduate Research

4.1 Advisory Committee

Each student completing a SoET Master's Plan of Study must select an advisory committee. The exception is if you are in the online program. The advisory committee needs to be selected by the end of the second semester of enrollment. The major professor will help identify faculty members who have expertise in the area of research or professional interest. Committee members can come from another academic School/Department within the PPI or from any other School/Department from across campus. Depending upon the research methodology topic (Chapter Three), don't hesitate to include a faculty member from the Department of Statistics to be on your committee. A co-advisor may be designated when its advantageous to the student and where the faculty member can build faculty experience. The advisory committee will advise on courses selected for the plan of study, and as needed during the progression of graduate studies. The students' advisory committee must approve plans of study, research project outlines, and thesis. Students are responsible for keeping all committee members informed of their progress. Failure to meet the filing deadlines will result in loss of a student's graduate assistantship, until the process has been satisfactorily completed.

The advisory committee for a master's degree consists of the major professor and a minimum of two other members of the graduate faculty. For a MS degree, all committee members can be SoET faculty, or one member can be from outside of the School. Having at least one outside committee member to serve on the committee, adds significant value to the overall credibility, and merit of the thesis and/or capstone directed research project. You must notify the SoET graduate administrative assistant to start the process for getting the committee member on a "special" appointment which would allow him/her to serve on your committee.

4.2 Integrity in Research

Integrity in research is an essential part of Purdue University's intellectual and social structure, and adherence to its spirit and principles must be maintained. These principles include commitment to truth, objectivity, fairness, honesty, and free inquiry. Violations of integrity may result in dismissal from the university.

Serious violations of integrity in research are rare. However, those that do occur strike at the very heart of scholarship and the concept of the university. Advances in scientific knowledge depend

on reliable data and honestly reported conclusions. For any academic institution, scholars, researchers, and artists have a special obligation to exemplify the best qualities and highest standards of personal and professional conduct.

All SoET graduate students are required to complete the online training course on Responsible Conduct of Research (RCR) by the end of the first semester of enrollment. The RCR was developed by the Collaborative Institutional Training Initiative (CITI) available at https://www.purdue.edu/gradschool/research/rcr/. Students must also be familiar with policies on responsible conduct of research at the above website. Purdue expects each graduate student to uphold the Purdue Honor Pledge, https://www.purdue.edu/odos/osrr/honor-pledge/about.html and the Protect Purdue policy https://protect.purdue.edu/odos/osrr/honor-pledge/about.html and the Protect Purdue policy https://protect.purdue.edu/. All students must adhere to said guidelines and/or policies noted. A violation of either, will be turned over the Dean of Students for appropriate action.

4.3 The Research Proposal

A research proposal is required for students completing a thesis or capstone directed research project (CDRP). The research proposal must follow a format as guided and approved by the student's major professor and advisory committee (typically a mini/condensed report containing research problem statement, hypothesizes, and chapters one through three). The proposal including the first three chapters of the thesis, or CDRP (Introduction including four sentence research problem statement initially derived or revised after MET 52700), Review of Literature, and Research Methodology). Specific expectations for the format (APA/ARWE), length, and content of the research proposal are set by the major professor and communicated to the student. The research proposal needs to be submitted to the examining/thesis advisory committee at least two weeks prior to the oral examination. The proposal defense and the final defense of either the thesis or directed project CANNOT occur in the same semester. The proposal defense meeting must be scheduled two (2) weeks in advance of the date of the proposal defense. After successfully completing your proposal defense, be sure the "SoET Proposal Form" is completed by your committee chair and submitted electronically to the SoET MS Administrative Assistant. Please view https://polytechnic.purdue.edu/sites/default/files/files/Soet-Proposal-Form-9-20-19.docx.

4.4 APA and Formatting Requirements for Thesis and Directed Project

Students are required to follow the SoET template found on the Graduate School webpage (<u>https://www.purdue.edu/gradschool/research/thesis/templates.html</u>) Students shall adhere to the SOET Thesis/Directed Project Checklist, APA Handbook 7th edition including writing style and format learned in MET 52700, abiding by the Academic Research Writing Expectations (ARWE) document. <u>Abstract follows APA format</u>. Please refer to the following chart for a simplified outline of the thesis timetable:

<u>Proposal Timeline</u>

What	When
Confirm that the plan of study has been	Must be filed and approved by the end of your
approved by the Graduate School.	second semester.
Discuss the schedule and format for the research	Near the beginning of the semester in which plan
proposal with your major professor.	take your proposal/defense.
Complete the Research Proposal	Proposal must be done the semester before the plan
	defense is scheduled.
Proposal Form	After your proposal is approved, have chair and
	committee sign form and send to Niedra
	electronically.
Submit electronic Form 8 via myPurdue.	The semester following the completion the
	committee members in 14 days prior to exam
Schedule the format check/reserve conference	After the date of the exam is established, work with
room	Niedra to schedule a format check with
	Dr. Dunlap.
Submit the document to your committee.	At least 2 weeks after submitting GS Form 8, but
	<i>before</i> the published semester deadline.
iThenticate Check – Completed by committee	Make all final corrections and have your major
chair.	professor complete the iThenticate check on your
	document. Send results to Niedra.
Format Check	On the day of your format check, send Niedra a
	copy of document in PDF format for approval.
Submit final document to Graduate School	After you have completed the format check.
SoET exit questionnaire	Niedra will email a survey to take after all MS
	requirements are completed.

For information regarding how to submit an electronic Form 8, visit https://www.purdue.edu/gradschool/downloads/ExamForms Guidelines.pdf

5. Thesis and Defense

5.1 Declaring Candidacy for Graduation

Graduate students **must** declare candidacy during the semester in which they intend to defend their thesis and have their degree awarded. <u>The Graduate School Deadlines Calendar</u> provides the dates by which requirements must be completed, normally 1-2 weeks before the end of the semester. The student has the responsibility to communicate their graduation intentions to their major professor and the Graduate Program Administrative Assistant during the registration period for any given semester. A thesis or CDRP **MUST** be distributed to the committee at least <u>two weeks</u> prior to the final defense, and evaluated by each committee member. A thesis/CDRP **MUST be completed and physically present for the Final Oral Defense.** One of the responsibilities of the committee chair, is to compile feedback from each committee member, and direct the graduate student to make said changes to the document after the final oral defense. A final oral defense must have the students final work available and evaluated by each committee member. Each committee member is expected to provide oral/written feedback on the thesis/CDRP to the student. The chair is responsible to ensure that all edits or corrections are made. Students registered for candidacy for three consecutive semesters will be assessed a \$200 fee by the Graduate School. A "CAND" course, either 99100, 99200, or 99300 will appear on the student's registration for the appropriate semester of their graduation. To complete the process, it is the student's responsibility to confirm that the coursework on their plan of study matches the coursework actually taken at Purdue.

Appropriate CAND course registrations:

CAND 99100	CAND 99200	CAND 99300
(General Candidacy)	(Degree only)	(Exam only)
Students plan to fulfill all	Students must have met all	Students must have met all
requirements during the	degree requirements, except for	degree requirements, except for
semester. (See Graduate School	depositing their thesis/directed	defending and depositing.
Deadlines Calendar for due	project. Satisfactory research is	Satisfactory research is required
dates.) Students must be	required in the previous session,	in the previous session, and
enrolled in at least one credit	and students must meet a mid-	students must meet a mid-
hour of research.	semester deadline. Students	semester deadline. Students
	cannot be registered an for	cannot be registered for any
	courses.	courses.

*If assistance is needed in deciding which CAND course is correct, contact the SoET Grad Program Administrator.

CAND 99200 and CAND 99300 are considered a "privileged registration" status which results in lower fees, but **not** in full-time student status. As a general rule, students registered for CAND 99200 or 99300 may NOT be funded (supported on an assistantship). Be aware that most students who select option 2 or 3 leave campus before semester's end.

5.2 Thesis

The final product of the graduate research programs is a thesis or CDRP. The document represents the diligent and original work of the student. Due diligence must be taken to ensure the document is valid, original work, and free of plagiarism. The thesis or capstone directed research project must be distributed to the advisory committee at least <u>two weeks</u> before the final oral exam is given. Please visit the <u>Thesis/Dissertation Office's website</u> for instructions regarding deposit requirements, templates, and other submission questions.

<u>The major professor</u>, after review of the final edit document, MUST, confirm the student has followed the SoET Thesis/Checklist, ARWE document and completed the iThenticate verification. Once these three noted actions are completed, the major professor shall send the PDF document to the SoET graduate education administrative assistant for further action. Any concerns or issues of the submitted document will be returned to the chair copied to the School Head.

The Graduate School requires a specific format for all theses and dissertations. Detailed information on formatting the thesis or dissertation can be found at the Graduate School's Thesis/Dissertation Office Website: <u>http://www.purdue.edu/gradschool/research/thesis/</u> The student is responsible for completing all deposit requirements.

5.3 Final Exams

A final oral examination is taken after the completion of all course work and the thesis or directed project. The exam can cover any material in the candidate's program, but is typically is a defense of the thesis or directed project research and written document. The thesis or directed project MUST BE distributed to the committee chair first, for approval, before submitting to other committee members. The thesis or direct project Must be made available at least one week prior to the oral defense. The thesis or directed project Must be physically completed and physically present for the oral defense. Students completing a thesis must initiate the exam Form 8 prior to the exam. The form must be approved by all committee members 14 days prior to exam. Once you have passed the final examination for your degree, your chair and examining committee members will electronically sign the Graduate School Examination Report (GS Form 7) AFTER all corrections to the thesis is made. Once the other required signatures are secured, the report is finalized in the Graduate School. Note, your final copy of your thesis or directed project must be submitted by your chair to the SoET graduate education administrative assistant so the graduate education committee chair can approve the document as to the required and prescribed format guidelines. Failure to comply with format guidelines will lead to delayed graduation.

5.4 The Deposit Process

Students are required to submit their Master of Science thesis electronically to the Purdue Graduate School for review after approval from the chair of the SoET Graduate Committee. Filename for a thesis shall be, Firstname_Lastname_MSET-Thesis_August-2021.PDF. Filename convention for Capstone Directed Research Project shall be Firstname_Lastname_MSET-CDRP_August-2021.PDF. Note: Month and Year shall be the month and year of final oral defense. Your electronic PDF file of your thesis will be uploaded to the Hammer Research Repository (HammerRR) unless IP is noted and recognized formally by the student and major professor. A final copy of the thesis/dissertation needs to be delivered to the major professor and committee members, if they desire one. Please visit the Thesis/Dissertation Office's Deposit Process website for more information:

https://www.purdue.edu/gradschool/research/thesis/requirements.html.

The Graduate School has a Directed Research Project channel in Hammer: <u>https://hammer.purdue.edu/Directed_Research_Projects</u>. The graduate student and major professor must follow the same procedures as those who submit a thesis.

6. Other Policies

6.1 Graduate Students' Right to Appeal

Student Conduct

Graduate students, like all students officially enrolled at Purdue University, are subject to all university regulations. At the same time, student rights as individuals and as students are duly protected. Graduate students who feel that their rights have been violated by a disciplinary decision may seek redress through the Community Standards Board, according to the procedures specified in <u>Regulations Governing Student Conduct</u>, <u>Disciplinary Proceedings</u>, and <u>Appeals</u>, Section C-8 of the University Regulations, Student Conduct Policy.

<u>Academic Standards</u>

Graduate students must be proactive in matters pertaining to their academic program, coursework, and research. Therefore, the SoET graduate faculty expect that all graduate students will meet with their advisor at the beginning of each semester, the mid-point of the semester, and in the later portion of the semester before final examinations. The purpose of the meetings is to be certain both the student and advisor, understand and agree upon expectations and deliverables, course registration, research and/or independent study credits, and other academic matters such as being an TA/RA. **Meeting frequently with your major advisor will help avoid any major issues before they arise.** The Graduate School, Dean of Students, and other university processes are in place if more guidance is needed.

Graduate students who wish to appeal decisions concerning matters of academic expectations/standards may seek direction according to procedures specified in the <u>Student</u> <u>Conduct Policy, Regulations Governing Student Conduct, Disciplinary Proceedings, and</u> <u>Appeals</u>, Section E-Grade Appeals System, of University Regulations and to the procedures detailed in Graduate Council Document 91-C which have been established in accordance with the authority thereby delegated to the Graduate Council. Further information regarding graduate student appeals concerning academic standards can be found in the <u>Policies and Procedures for</u> <u>Administering Graduate Student Programs</u>, section IX, A. Student Conduct and Rights of Appeal.

6.2 Nondiscrimination Policy Statement

Purdue University is committed to maintaining a community which recognizes and values the inherent worth and dignity of every person; fosters tolerance, sensitivity, understanding, and mutual respect among its members; and encourages everyone to strive to reach his or her own potential. Pursuit of academic excellence, the university seeks to develop and nurture diversity. Purdue University believes that diversity among its many members strengthens the institution, stimulates creativity, promotes the exchange of ideas, and enriches campus life.

Purdue University views, evaluates, and treats all persons in any university-related activity or circumstance in which they may be involved, solely as individuals on the basis of their own personal abilities, qualifications, and other relevant characteristics.

Purdue University prohibits discrimination against any member of the university community on the basis of race, religion, color, sex, age, national origin or ancestry, marital status, parental status, sexual orientation, disability, or status as a veteran. The university will conduct its programs, services and activities consistent with applicable federal, state and local laws, regulations and orders and in conformance with the procedures and limitations as set forth in Purdue's Equal Opportunity, Equal Access and Affirmative Action policy which provides specific contractual rights and remedies. Additionally, the university promotes the full realization of equal employment opportunity for women, minorities, persons with disabilities and veterans through its affirmative action program.

7. Professional Development

7.1 Professional Societies

The SoET expects all graduate students to become active members of professional societies and encourages attendance at professional meetings and conferences. Depending upon the situation, travel and lodging are the student's personal responsibility, except in cases where project funds are available for this purpose. Professional and research associations have branches on campus. such as <u>https://www.purdue.edu/sao/</u>.

7.2 Graduate Student Awards

As part of both the Purdue Polytechnic Institute, (PPI) and the School of Engineering Technology (SoET), graduate students in the SoET may be eligible for annual awards. The Graduate Program Administrative Assistant sends email notifications to all graduate students of specific awards, application materials needed, and deadlines, which graduate students are responsible for meeting if they wish to be considered.

8. Graduate Student Employment

8.1 Workloads of Students with Graduate Staff Appointments

All funded graduate assistantships are expected to contribute to the research enterprise of the SoET. A Thesis or at a minimum a Directed Project **is expected** if SoET is funding your assistantship. To maintain SoET funding as a TA Thesis/Directed Project deliverable is required.

Graduate students in the SoET can be supported by half-time research or teaching assistantships. Purdue, like many other major research universities, assumes that a half-time appointment constitutes a contract for 20 hours of service per week. If an assistant's duties are independent of the student's course work and research, the definition of the half-time work load is relatively straight forward: not more than 20 hours per week.

All graduate assistants need to realize that research relating to their degree is not included in the 20 hours, and must be done in addition to the 20 hours the half-time appointment involves. More than 50% of all students will register for research course hours every semester to account for the time spent on research in the lab or desk each week beyond their work as a research or teaching assistant. Research deliverable disputes between graduate assistants and major professors need to be discussed between the parties involved, and moderated by the School Head if necessary. See the Purdue University Graduate School Policies and Procedures for Administering Graduate Student Programs in the University Catalog: <u>http://catalog.purdue.edu/</u> for additional information.

For rare cases if a graduate student is on a three-quarter or full-time assistantship, the time guidelines above will be modified to account for the reduced course load restrictions due to such appointments.

To be eligible to hold a graduate staff appointment during any session, the student must be enrolled as a degree-seeking graduate student and be registered full time for the duration of each semester during the entire appointment period. Graduate staff on a half time appointment during the summer are obligated to register for a minimum of 3 graduate hours during at least one of the summer modules.

8.2 Vacation and Sick Leave Policy

As staff of the department, students on a full-time (.50 FTE) assistanthsip are eligible for benefits. Sick days must be approved by your supervisor and department head. Any leave must be reported to the SoET graduate program contact and in Success Factors. Those graduate assistants employed only during the academic year are not paid during university breaks and are not required to use vacation.

Graduate student fiscal-year staff who terminate their employment with the University forfeit any unused vacation allowance. This allowance will not be paid to the staff member, nor may their appointment be extended to cover any unused vacation. Official holidays are announced annually by Purdue's president and provide for additional leave days.

Sick Leave: All Benefits-Eligible Graduate Student Staff are eligible for 10 working days of paid sick leave for employee illness within a 12-month period. Family Illness: All Benefits-Eligible Graduate Student Staff are eligible for three working days of paid leave per fiscal year for illness of Immediate Family. Benefits-elegible graduate staff are eiligible for paid bereavement leave due to death in the immediate family. Up to five workdays over six consecutive calendar months are allowed. Up to one workday for the death of extended family members, or fellow employees. For specific details regarding leave, bereavement, sick leave, etc. please see the Graduate Student Employment Manual, available at:

<u>http://www.purdue.edu/gradschool/documents/gpo/graduate-student-employment-manual.pdf</u> and the Graduate Student Staff Benefits policy at <u>https://www.purdue.edu/policies/human-</u> resources/s3.html.

8.3 Student Offices

Graduate students employed by the SoET can be assigned office space, as available, when they begin their graduate studies. The SoET Head, or designee, is in charge of assigning office space. Any requests for changes in the graduate student offices must be submitted to the SoET Head.

8.4 Keys

Graduate students can be granted access to use labs and/or offices throught Knoy Hall. The outside doors are typically open to the public Monday to Friday, 6 a.m. to 11 p.m. Students can requset key or card access by completing the key request form found on our <u>webpage</u>. You will be notified by email when your request has been approved. Before you submit a request for room access you must complete the <u>safety training</u>. This training should be completed annually. Students will be notified to contact the building deputy upon approval of the key request. **ALL Keys must be returned** and the assigned space clean before your departure at the end of the semester.

8.5 Travel

Travel Requests and Reimbursement

All travel is centralized through West Lafayette's Purdue Travel department. For more information regarding the expense report process, please visit <u>Report Travel Expenses</u>. <u>Approval first</u>, must be obtained by the major professor and the SoET Head. If approved, follow the guidelines on the Purdue Travel webpage. Reimbursements may not be made for trips for which prior approval was not requested and granted. **Please inquire with the PPI Business office to help through this process**.

University Vehicles

University vehicles are available for transportation on research or project work that require transportation. Students using these vehicles must possess a valid U.S. driver's license. Be aware that you will need to allow approximately 5 business days for processing of Driver Authorization Requests, which must be secured PRIOR your first use of a University Vehicle. Please inquire through the Business Office on the process.

For trips which may take more than of a half day, cars and vans may be obtained from the University Transportation Department (<u>https://www.purdue.edu/transportation</u>/). The vehicle must be requested in advance by telephone or email, and the Vehicle Rental Form (Form 1) filled out and signed by the PPI Business Office. The form must be presented to the University Transportation Service when picking up the vehicle. Students using university vehicles must possess a valid driver's license and be an approved driver through Risk Management.

8.6 Safety

All graduate students must complete the <u>safety traning</u> annually. The training must be completed before you can teach and or use any of the labs. Any questions or concerns regarding safety or hazard training can be directed Mr. Shawn Davis, Lab Supervisor at <u>davis616@purdue.edu</u> or phone 765-494-7501. Also, Purdue's office Radiological and Environmental Management (REM) has a wealth of information your use at <u>https://www.purdue.edu/ehps/rem</u> or 765-494-6371.

9. Resources for Graduate Student Research

9.1 Fabrication of Research Equipment

Research equipment is often constructed for specific projects. The SoET and university can provide students with help in the construction of this equipment. The SoET departmental Laboratory Supervisor can provide ideas, assistance, and advice for your specific research needs.

9.2 Printing and Photocopying

Use of the photocopiers for teaching and research must be approved by your major professor. If you are on an SoET assitantship you will be issued a copy code to use in KNOY 142. Contact Niedra to request a copy code. Duplicating services are also available at several locations on campus. Each student is expected to pay the cost of reproducing their thesis or directed project. Physical copies of the thesis/directed project are not required for submission, but students need to ask their committee if they want a physical copy before printing.

9.3 Purchasing Supplies

<u>Requisitions</u>

If students need to make a purchase related to research or for a lab, electornially prepare a **purchase request form 12**. The purchase request must be filled out completely and your professor must sign for approval. On the form, a justification for the purchase is requeird. If you purchase request is for research this should be emailed to Niedra McLeland **nmclelan@purdue.edu** for department approval. Purchases for coures need to be sent to lab technicians for department approval. You will be notified by email when the order has been placed. If you want make a purchase by checking out a credit card, idicate that in the body of the email and on the purchase request. When the purchase request has been approved electronically, office staff will forward the approved email and form 12 to the Polytechnic Buisenss Office Center. After you make the purchase, return the creidt card to the BO Center with the receipt. The reciept can also be emailed to the BO Center

(knoy-creditcards@purdue.edu). Once the pacakge arrives, take the packing slip to the BO Center. You will recive an emial notification once the purchase has been made. Forms and procedures can be found here: <u>https://polytechnic.purdue.edu/business-office/pboc-purchasing-center</u>

10. Beyond Research: Taking Advantage of Life at Purdue

Purdue University, as one of the world's great universities, provides valuable opportunities for learning beyond the classroom, laboratory, and industry research sites. While you have many responsibilities to fulfill as an SoET graduate student researcher, you are also encouraged to take advantage of the unique resources to which you have access.

- Getting to know other SoET graduate students is a great benefit of being at Purdue. The Purdue Graduate Student Government Association (<u>https://purduegradstudents.com/</u>) helps foster a sense of community among SoET and all graduate students through organized social activities, philanthropy events, mentoring, and professional development programs. All SoET graduate students are encouraged to participate. Purdue SoET graduate students come from around the world, and being part of such an international community is an opportunity to get to know and celebrate our diverse cultures.
- Extracurricular: The SoET graduate students are active in many extracurricular activities, including organized athletics, classes at the co-rec, activities at the LGBTQ center, religious activities, and cultural organizations of many nations and cultures. Purdue's cultural centers are listed at https://www.purdue.edu/diversity-inclusion/about-us/departments.html, and clubs representing many interests can be found at https://boilerlink.purdue.edu/. These activities can provide balance and enrichment in your life while serving others, and graduate students are encouraged to get involved. Checkout the Graduate School website for additional student organizations (https://www.purdue.edu/gradschool/student/organizations/general.html).
 - Health and Wellness: Purdue provides a variety of health and wellness programs including general wellness, nutrition services, massage therapy, and more. For more information please visit https://www.purdue.edu/recwell/programs/wellnessPrograms/.

The Graduate School provides links to many other opportunities at <u>https://www.purdue.edu/gradschool/student/services/</u>.

11. Appendices

Appendix A: Plan of Study Instructions

Engineering Technology- Guidelines for Completing your Plan of Study (POS)

Your plan of study needs to be submitted, and reach the Graduate school for approval by the graduate school deadline.

<u>MS students</u>: The POS must be submitted and completed in your second or third semester of study (or no later than the semester prior to the semester in which you plan to graduate).

IMPORTANT NOTES:

- Your advisory committee must consist of a minimum of 3 members, with 2 of the members having regular graduate faculty certification from ENGT. When you list your advisory committee members, you must also list their area of study. Your major advisor should be listed as your Chair. The student must have a major professor and know who else will serve as an advisory committee member before initiating the POS.
- If you intend to include a committee member from outside Purdue, you must inform the Director of Graduate Studies/Graduate Coordinator as soon as possible. The department graduate office has to initiate paperwork for inclusion of a committee member from outside Purdue which may take some time (in comparison with having committee members from within Purdue). After the paperwork is filed by the Engineering Technology Graduate Office and is approved by the Graduate School, the member from outside Purdue will be accorded "Special Graduate Faculty" status.
- Students are expected to file a plan of study by the end of their second or third semester. Presenting your final project, defending your thesis, or advancing to PhD Candidacy (by completing your Preliminary Exam) can only occur if you have an approved POS. If you fail to do so, there is risk in completing coursework that your committee may ultimately reject. More importantly, there are university deadlines after which a monetary penalty will be assessed. At the time of this publication, **a late fee of \$200** is assessed if the plan of study has not been fully approved (at all levels) BEFORE the first day of classes of your final semester. Students should submit their POS for Final Approval allowing at least **14 business days** to secure all approvals.
- Review your transcript to confirm that it will have the required number of credits for graduation by the end of the semester in which you plan to graduate
- Students can file changes to the POS such as the major professor/committee members and/or courses using the change request function. At the time of this writing, there are no late fee penalties for revisions to a previously approved plan of study even in the last semester of study.

Once you have reviewed your plan of study and transcript, and affirm that you meet all expectations and requirements, contact the Graduate Studies Office and ask to be added to the graduation list and specify the semester in which you plan to graduate.

For PhD Students: Note that two semesters of registration must occur between the semester in which your Preliminary Exam was passed and the semester in which you plan to graduate. The summer semester counts (as long as you are registered for a class or dissertation research credits). Check to confirm that your registration history meets this requirement.

Access to the electronic Plan of Study Generator, which is provided by the Graduate School, is via MyPurdue (http://www.mypurdue.purdue.edu). To begin your plan of study, follow the steps below:

- Click on the "Academic" tab.
- Click on the "Graduate School Plan of Study" link.
- Log in (using your Purdue user name and password) on the "Authorization Screen".
- Click on the "Plan of Study Generator" link.
- Click on the "Create New Plan of Study" link.

NIVERSITY.	Fuldue			
aculty Academics	Bills & Payments	Financial Aid Life @ Purdue		
My Courses		Personal Information	Announceme	nts
Registered courses for Fall 2015 Section Instru E HDFS-62930-001 Christ E POL-50100-001 Watter	- (iii) ctor Sharon nburg, Eric	Aduranses & Prinnes Franchisteria Franchisteria Emergens Vontate Emergens Vontate Emergens Professore Religious Professore	Welcome to t We've just had a m and feel of myPurg	he new myPardue! ajor system upgrade. Check out <u>the new ic</u> lag for details on what has changed.
SCC-69500-008 Yang,	Fengaang	Name Change Infe SSN Change Info Student Record	Academic Pr	ofile Select Another Term
Schedule		Sexual Orientation/Gender	Primary	
			Curriculum	
Week-at-a-Glance			Class Standing:	Graduate
Detail Schedule		Enrollment Certification	Degree:	Master of Science
Evening & Final Exams		National Student Clearinghouse	Level:	Graduate
		The place to order your enrollment certification for employment,	Program:	Sociology-MS
Grades		GPA must be requested through the Office of the Registrar.	Admit Term:	Fall 2014
a contraction of the second			Catalog Term:	Fall 2014
Final Grades Grade Detail			College:	Graduate School
oldo belan		Graduate Students	Campus:	West Latayette
100.00		Graduate School Plan of Study	Major:	Sociology
Transcript		The Plan of Study Generator is for environmentation of Students.	Advisors	
View Unofficial Transcript Order Official Transcript			Transcript	Holds

To fill out the form below: Update any of the fields where a box or drop-down list is available. After you have completed all necessary fields click "Process and Continue."

Pi Pi	urdue University Graduate Scl	hool
	Graduate Plan of Study Generator	
io fill out this form:		
-Indicate Department that is granting the degree.		
-Indicate the first semester of graduate study at any Purdue can	npus.	
-indicate your email address.		
or more detailed instructions click on the Help button at the botto	om of the page.	
Most recent registration in:		HKLS
Campus: Campus granting degree		West Lafayette (Main Campus
Department: Department graning degree.		HKLS -
First semester of graduate study at Purdue: Use academic year (1998-99). Transfer of Reactory students indicate the first semester of graduate study at our Furdu		•7
Email Address:	Note: Use Purdue email address	
Process and Continue will process this page, any errors detected will b Cancel will return you to the menu for your plan of study but will not r	be displayed at that time. etain any data entered on this page.	
	Help Process and Continue Cancel	

To fill out the form below: Select the appropriate degree title you are currently seeking. You will then select either "Non- Thesis or Thesis Option" along with the expected Degree Date. After you have completed all necessary fields click "Process and Continue."

Pu	ırdue University Graduate School
	Graduate Plan of Study Generator
Please select the degree you are seeking and the date you are expect	ing to achieve this degree. For detailed instructions click on the Help button at the bottom of the page.
Listed are degrees available for Sociology on the West Lafayette (Main	Campus) campus.
Degree Title:	(PHD) DOCTOR OF PHILOSOPHY + Select (PhD) or (MIS)
Choose Non-Thesis or Thesis Option:	
Date Degree Expected	
Process and Continue will process this page, any errors detected will b Cancel will return you to the menu for your plan of study but will not re	e displayed at that time. etain any data entered on this page.
	Help Process and Continue Cancel

Once you have completed the information in the above screen, a check mark will be marked in the "Student and Degree Information" box. Click on "Research Project and Language Requirements."

	8		Pı Reg	urdue Unive Juest for Master and Plan of S	rsity Gradua s Degree Advisor tudy Approval	te School y Committee			
Click to	open a new browser wind	ow that contains <u>S</u>	ociology 's Plan ø	f Study Guidelines and I	lequirements				
E [Student and Degree In List: degree title, cam Research Project and I List. research area, co	formation pus, department, e Language Require ncentration and lar	spected graduate d ments iguage requiremen	late, email address.					
[Course Work List courses for your j	plan of study							
[Comments and Special List any special notes No information on thi	Notes or comments s page is required							
Before Open a HELP 1	submitting, please Preview new browser window cont auton below for help on ut	r Plan of Study to aining the <u>Gradua</u> lizing the web bas	ensure your plan i <u>te School's Polici</u> ed plan of study ge	s accurate and complete. es and Procedures Manu enerator.	al. Section VII for informe	tion on university polici	es when developin	g a plan of study.	Click on the
Help	Save without Submitting	Submit as Draft	Submit as Final	Delete this Plan	a rue meib patron pelos p	or turtner explanation.			

Please complete 'Research Area'. Leave the rest of the lines blank. Once you have entered the information needed click "Process and Continue."

	Purdue University Graduate School Request for Master's Degree Advisory Committee and Plan of Study Approval
For detailed instructions click on the Help button at the bot	tom of the page.
Research Area: (* required for Ph.D., optional for Master's) - Indicate a short title of the research area chosen.	
Concentration: (* optional) - Select a concentration from the drop down list. or select Other	r from the drop down list and enter your concentration in the "Other" text box. Other:
Language Requirement:	
- Designate specific language requirements and the method to b	be used to satisfy the requirements
- This information is required by some departments. Refer to yo	our department's Guidelines and Requirements link.
"Process and Continue" will process this page and display any o	errors. If no errors are detected then the next page of the plan of study generator will be displayed.
Help Process and Continue	

Next, start adding your coursework

A.	Purdue University Graduate School	
	Request for Master's Degree Advisory Committee	
	and Plan of Study Approval	
lick to open a new browser window that contains	Sociology 's Plan of Study Guidelines and Requirements	
Student and Degree Information		
List: degree title, campus, department,	expected graduate date, email address.	
Research Project and Language Requi	rements	
List: research area, concentration and l	anguage requirements.	
List courses for your plan of study		
Advisory Committee		
List advisory committee members.		
Comments and Special Notes		
List any special notes or comments.		
No information on this page is required		
efore submitting, please Preview Plan of Study t	o ensure your plan is accurate and complete.	
open a new browser window containing the Grad	ate School's Policies and Procedures Manual, Section VII for information on university po	licies when developing a plan of study. Click on t
ELP button below for help on utilizing the web b	ised plan of study generator.	
t is recommended that you submit your plan as	a Draft before submitting as Final. Click on the Help button below for further explanation	on.
Help Save without Submitting Submit as Draft	Submit as Final Delete this Plan	

Click "Courses currently being taken or those previously complete at Purdue University (as a graduate student)" Most of your coursework you will be entering, will be under the CURRENT or FUTURE coursework.



For each course being used on this Plan of Study:

- Click the "Use" box -Indicate the Area: Primary, Related or Not Applicable ("Primary"- Major area coursework, "Related"- Minor area coursework, "Not Applicable"- Core or Extra Coursework)
- Click the box "B or Better Required" for 300 & 400-level courses as well as any transfer credits.

NOTE: Make sure you uncheck any of the "Use" boxes for courses that you do NOT want to be on this plan of study. Once you have completed this form, please click "Process and Continue."



"Process and Continue" will process this page and display any errors. If no errors are detected then the next page of the plan of study generator will be displayed.

se	Area	B or Better Required	Course / Session / Credit Hours / Grade
	Primary Related Not Applicable	ম	59000 TITLE / Summer 2013-14 / 3 /
	Primary Related		HK / Spring 2013-14 / 3 / Grade

You will only need to complete "Transfer courses and courses taken as excess undergraduate credit" portion if you have received authorization from the Graduate Committee on transferring courses. Otherwise you will click "Courses to be taken in the future at Purdue."

	Purdue University Graduate School
	Request for Master's Degree Advisory Committee
	and Plan of Study Approval
Indicate the courses to be used on you For more detailed instructions, clic	ir plan of study using the following links. Click on the Process and Continue button at the bottom of the page when you are done. k on the Help button at the bottom of the page.
Courses currently being take	n or those previously completed at Purdue University (as a graduate student).
Transfer courses and courses	taken as excess undergraduate credit.
Courses to be taken in the fut	ure at Purdue.
Open a new browser window contain HELP button below for help on utiliz	ing the Graduate School's Policies and Procedures Manual, Section VII for information on university policies when developing a plan of study. Click on the ing the web based plan of study generator.
"Process and Continue" will process t	his page and display any errors. If no errors are detected then the next page of the plan of study generator will be displayed.
Help Process and Continue	

This section if for you to add any coursework you plan to take in future semesters for your degree. For each course you add:

- 1. Mark if they are "Primary," "Related" or "Not Applicable"
- 2. Select Subject Abbreviation
- 3. Course number (this will be a 5 digit number such as 63000 (it is NOT the Banner CRN)
- 4. Enter the number of Credit hours
- 5. Select the box of "B or Better Required"
- 6. Enter Course Title
- 7. From the drop down, select the session you plan to complete the course
- 8. Click "add"

NOTE for PhD POS: Do NOT enter 699 research hours into your plan of study**

					Purdue courses to be taken that will apply to this plan of study					
he action buttons i in Add button to a equired information ourses are displayed	for each ro dd the row n for each li d in sort or	w (Add, 1 After a c ine is marl der by Pro	Modify. course l ced with gram A	Delete) are the rig has been added yo h an asterick (*). rea, Subject, and Co	ght most column. If th u may modify or delet ourse Number.	e action buttons are not visible, use t e the information.	the horizonal scroll bar to view the entire row. You must fill in each row,	then click o		
or more detailed in pen a new browser	window co	a, click on intaining f	the He he Grad	up button at the bo luate School Course	information of the On	Line Course Catalog for information	n on university courses.			
or more detailed in pen a new browser ote: Course No. is Area	window co part of the Subj. Abbr.	click on ntaining f subject- Course No.	the He he Grad course i Credit Hrs.	button at the bo iuate School Course no. combination (e B or Better Required	trom of the page. = information of the <u>On</u> = g. COMM 11400) - no Course Title *	-Line Course Catalog for information of the Banner CRN. Session to be Completed specify academic year (i.e. 1995-99)	n on university courses.			

Once you have finished adding all your future coursework, click "Process and Continue"

Now you will enter your advisory committee.

4	Purdue University Graduate School Request for Master's Degree Advisory Committee and Plan of Study Approval
Click to open a new browser window that contai	ns Sociology 's Plan of Study Guidelmes and Requirements
Student and Degree Information List degree title, campus, department	nt, expected graduate date, email address:
Research Project and Language Rec List: research area, concentration an	ulirements d languago requirements.
Course Work List courses for your plan of study.	
Advisory Committee List advisory committee members.	
Comments and Special Notes List any special notes or comments. No information on this page is requi	red
Before submitting, please Proview Plan of Stud	x to ensure your plan is accurate and complete.
Open a new browser window containing the Gra for help on utilizing the web based plan of study	dnate School's Policies and Procedures Manual, Section VII for information on university policies when developing a plan of study. Click on the HELP button below generator.
It is recommended that you submit your plan	as a Draft before submitting as Final. Click on the Help button below for further explanation.
Help Save without Submitting Submit as	Draft Submit as Final Delete this Plan

Use the "Faculty Advisor Search" section at the bottom of this page to obtain the identifiers for all people who are to serve on your committee. If a faculty person is associated with more than

one department at Purdue, search for them in the department that they will be representing while on your committee.

If you have a committee member from outside Purdue you will NOT be able to add them if you have not informed the HK Graduate Studies Office in advance. That is because the member from outside Purdue has to be provided a "Special" status. And to obtain the "special" status the graduate office has to file paperwork. (Also referred to on page 1 of these instructions.)

		P	urdue University	Graduate Scho	ol
		Rec	quest for Master's Degr and Plan of Study A	e Advisory Commi pproval	ttee
or each member of your o	ommittee, indicate their p	participation, enter their Fact	alty 4+5 Code from the list and enter t	e area of expertise which each	faculty member will contribute to the committee.
se the "Faculty Advisory urdue, search for them in	Search" section at the bot the department that they	ttom of this page to obtain th will be representing while or	e identifiers for all people who are to a your committee.	erve on your committee. If a f	aculty person is associated with more then one department
I you are unable to find t	hat person from the list	, please contact your depar	tment's Plan-of-Study Coordinator	o obtain the "Faculty 4+5 C	ode".
Participation of Member	Faculty 4+5 Code	Advisor Name	Area of Advisor (*optional)	Action	
2.50					
Chair	and the second se			and the second se	
Chair Co-Chair Member	The search and	Carlina Gally R. C.	Calles and and	Add	
Co-Chair Member				Add	
Co-Chair Co-Chair Member "Process and Continue" will Help. [Process and Cont	Il process this page and d	isplay any errors. If no errors	s are detected then the next page of the	plan of study generator will be	e displayed.
Chair Co-Chair Member "Process and Continue" will Help Process and Cont Faculty Advisor Search - commitee Please continue	I process this page and di tinue	isplay any errors. If no errors nent of the faculty member (ve found the codes for at	s are detected then the next page of the To search for Faculty	add plan of study generator will be select the	e displayed.

You can scroll through the results to find the faculty member on your committee. Once you locate them. You will select if they are "chair," "co-chair" or "member." Enter the department abbreviation that they will be representing while on your committee. You will then enter in the identifier number that you found in the search results. Once you have entered your entire committee, please click "Process and Continue." You will see the names and identifiers of the faculty members you entered. You can also see who the chair is and who are the members. NOTE: A PhD POS will need three committee members plus a chair (or two co-chairs and two committee members)

If there are no changes, submit your Plan of Study as a "Final"

Appendix C: Plan of Study Worksheet

Plan of Study Worksheet- School of Engineering Technology

Note: Student must enter his/her Plan of Study in the Graduate Database found by logging into myPurdue, under the "Academics Tab", then click on "Plan of Study Generator". Each student must file their plan of study by the end of the 2nd semester.

Current Degree Program

- □ MS-Thesis
- □ MS-Directed Project (Non-Thesis)
- □ MS-Coursework Only (Non-Thesis)

Thesis title:

Minor/Concentration:

Expected Graduation Date:

Committee Chair:

Committee Members: (must have at least two)

COURSES						
Official Title (Abbreviated)	Subject	Course #	Credit Hours	Grade	Date Completed	Primary or Related Area

Total Number of Credit Hours:

Keeping the following guidelines in mind as your complete your plan of study.

- *Required core courses for Thesis and Directed Project: ENGT 50100, STAT course, MET 50300, MET 52700, TECH 64600*
- Required core courses for coursework only option: ENGT 50100, STAT course, MET 503, MET 527
- *Research credits do not go on the plan of study*
- *MET 52700 needs to be taken before TECH 64600. You will not be able to take MET 52700 until you have you plan of study filed.*
- Students completing a Thesis or Directed Project must complete a minimum of 9 credit hours of research.
- Limited to 6 credit hours of independent study (MET/ECET 59000)
- Students may not include credit for more than one of the following: IET 50700, STAT 50100, or STAT 511 because these courses cover the same basic material.
- Coursework only must have 30 course credit hours.

Appendix D: Plan of Study Worksheet for Online Program

Plan of Study Worksheet - MSET Online Student Course Plan of Study and Audit

Student:

PUID:

Required Courses to Complete Degree	Credit	Couse Complete Date/Scheduled Date
Requirements (30 credit hours)	Hours	☑ indicates course completed
		Highlighted block – indicates course scheduled
		date
MET 52700 - Technology from a Global	3	
Perspective		
ENGT 50700 - Collaborative Leadership and	3	
Agile Strategy		
MET 53000- Facilities Engineering Technology	3	
ECET 53500- Energy Sustainability and	3	
Management		
ENGT 58100 -1- Smart Manufacturing and	3	
Global Supply Chain Management		
ENGT 58100 - 2 - Internet of Things and	3	
Cybersecurity		
ENGT 58300- Applied Engineering Statistics for	3	
Industry		
ENGT 55000 - Manufacturing Systems Design	3	
for Sustainability		
ENGT 59000 A - Engineering Technology	2	
Capstone Directed Research Project (Writing		
Review of Literature and Approved Proposal –		
Chapters 1-3) Student needs to have passed		
ENGI 58300 to register/enroll in ENGI 59000.		
Student <u>Must Have</u> , "B" or better to		
register/move forward into ENGT 59000B.		
forward		
ENCT 50000 D Engineering Technology	2	
Canstone Directed Research Project Writing	2	
(Research Investigation/Data Collection and		
Writing – Chapter 4)		
59000 C - Engineering Technology Canstone	2	
Directed Research Project (Writing Deliverable	2	
and Oral Defense – Chapter 5)		
	20	

Total Credit Hours

30

To find a list of online course descriptions, visit: <u>MS in Engineering Technology Courses</u> | <u>Purdue Online</u>

Questions about the online MSET program?

Admissions – (877) 497-5851, option 1 or OnlineProgramsAdmissions@purdue.edu Student Services/Course Enrollment/Plan of Study (877) 497-5853, option 3 or OnlineStudentServices@purdue.edu

Engage Technical Support 24/7 - (877) 497-5853 option 2 or Purdue@support.edu.help

https://polytechnic.purdue.edu/sites/default/files/files/Agreement-of-Deliverables.docx

Appendix F: ECET/IET/MET59000 Special Topics Contract Instructions

INSTRUCTIONS FOR REQUESTING PERMISSION TO ENROLL IN AN INDEPENDENT STUDY COURSE School of Engineering Technology Purdue University

About the Independent Study

Independent study courses are only allowed if they (1) supplement existing courses in the curriculum will provide a deeper study in a subject area, (2) delve into topics not currently covered/offered in existing course, or (3) work on specific research projects that are designed to extend the student's knowledge in a particular area. For all cases the course requirements must equate to the required effort that justifies the level and credit provided by the course. A independent study cannot substitute for existing, permanent courses. A maximum of six credit hours of independent study is permitted on any program plan of study. Additionally, independent study courses do not repeat, nor be used for remediation of, content already covered in other existing courses. Independent studies must be reviewed and approved by the student, course instructor, and the graduate committee chair before the start of the semester in which the independent study is to begin. Lastly, graduate students must have an approved plan of study on file to be eligible to enroll in an independent study course.

Process

For an independent study, the student and instructor must fill out an independent study authorization form containing a 16-week schedule of activities (with milestones or deliverables) and respective due dates. The student, course instructor, and chair of graduate committee signs the form and provides it to the graduate education secretary.

Procedural Requirements

- 1. Meet with your professor to discuss your proposed study and secure his/her approval for the project you envision.
- 2. Incorporating your professor's input, prepare a detailed project prospectus (typed, use APA format, title page), including the following indicated sections.
 - **a**. *Problem:* Define the rationale and delimit your problem area (explain your interest in pursuing the project, why this area is of concern to you). How does this project relate to your degree objectives?
 - **b.** *Purpose and Objectives:* What do you hope to accomplish? Provide a physical numbered listing of all objectives you expect to accomplish.
 - *c. Procedures:* Explain the methods you expect to use and any unusual requirements for materials, equipment, or facilities. A graphical time line and two progress reports from the student must be submitted by the student to the professor in charge between weeks three and ten of the semester. Specifically, indicate key deadline dates for each progress report and deliverable. Provide a narrative, flow chart, or outline of step-by-step procedures used to complete this study. If applicable, provide a supply and material cost worksheet
 - *d. Outcomes*: What will be the tangible results (deliverables, i.e. software source code, papers, reports, products, or summaries) of your study? Who will receive copies

(office, professor, co-working professor, and student)? Will you conduct a formal presentation of your results?

- e. *16-week outline:* The 16 week outline should include a week-by-week listing of any meetings, milestones or other deliverables, along with associated due dates, that the student will undertake.
- f. Assessment Criteria: How will outcomes be evaluated. Reason for grade.
- 3. Meet with your professor in charge to discuss and refine your project prospectus.
- 4. Revise the prospectus as necessary. Complete the <u>INDEPENDENT STUDY</u> <u>AUTHORIZATION FORM</u>; attach it to the front of the prospectus; and secure the signatures of you're the professor in charge of the independent study course you will be taking before pursuing the approval and signature of the chair of the graduate education committee.
- 5. Provide the form to your department for review by your department's graduate committee.

Independent Study Authorization Form

https://polytechnic.purdue.edu/sites/default/files/files/Independent-Study-Authorization-Form.docx

ACADEMIC RESEARCH WRITING EXPECTATIONS (ARWE)

Updated:1/16/2023 Dr. Dunlap, MET 52700/MS Thesis/Ph.D./Directed Research Projects (CDRP)/Dissertations

Notes complied by Graduate Faculty and Graduate Students

Read, memorize, use, and print this document to follow as a daily writing reference for all writing assignments/deliverables. Paying attention to the following details will cause considerably less consternation, help you obtain higher assignment/research evaluation scores, and potentially help you graduate in a reasonable timeframe. The quality of your academic writing reflects your intellectual merit and is assessed in your thesis/CDRP or assignments. You are a student of the Purdue Graduate School. Seek the Purdue Writing Lab (PWL) for help as needed. The PWL is aware of this document and can help you.

Introduction

Academic, Research, and or Technical writing is not the same as conversational or storytelling writing. The School of Engineering Technology faculty expect exemplary writing in all scholastic endeavors. Word choice, sentence structure, related syntax, and formatting of academic papers in MET 52700/Theses/Capstone Directed Research Projects/Dissertations under our guidance/approval follow 80% of the APA manual 7th edition guidelines. The remaining 20% of the parameters are a compilation of graduate school guidelines/templates, elements/items shown in Table 1 and 2 below, and the Checklist provided by the SoET. The required additional reference to be used for MET 52700 can be found at http://guides.lib.purdue.edu/c.php?g=707312 Sloppy, awkward, and passively worded sentences as well as the overuse of adverbs, reflect a doubtful, indolent, or unfocused writer or researcher. The graduate faculty expect you to write concisely, backing up your ideas/work backed up with references that have integrity. Passive voice, dangling modifiers, and unclear pronoun references leaves doubt in the reader's mind and, requiring additional writing time/rework. Eliminate sloppy writing from your graduate education vocabulary and writing style. A couple more items of important note: first, more than 50% of your references must come from your program of study courses and/or the Purdue University Library Portal (https://www.lib.purdue.edu/). Second, Wikipedia and other related internet repository sites are ok to review and get ideas. However, those resources, are not always credible. Therefore, use extreme caution when you cite or use in your List of References. You are responsible for following all the details below.

Academic Research Writing Dos and Don'ts

TABLE 1

Helpful Tips and Rules to Follow

General

Do NOT use passive voice, pronouns, adverbs, or emotive language.

Never begin a sentence with an acronym. Don't use the same word twice in a sentence.

Do NOT use prepositional phrases {PP} (or passive words) to start/begin a sentence.

Do not write in first- or second-person; always write in third person.

Phrases NOT approved for use: What is, Who is, They are, This was, This is etc.

Do not begin sentences using the words (or words similar to): this, with, an, and, it, is, its, it is, etc.

Know the difference between Affect vs. Effect. Understand how to use each depending on what you are conveying to the reader.

When an assignment is "x" pages long, fill entire page(s) with text, tables(s), graph(s), etc.

Formatting

Use left justification for all papers. Type and printout assignments, no handwriting.

Use an indent for each paragraph. Body of paper is double-spaced.

Maximum sentence length is to be no longer than 22 words.

ACADEMIC RESEARCH WRITING EXPECTATIONS (ARWE)

Last Updated: 10/4/2022 by Dr. Dunlap

Spell out numbers less than 10 unless associated with the body of your work. Don't start sentence using a number

Include page numbers at the bottom right of pages using the same font/point size as body of text. The title page has no numbering. HOWEVER for the CDRP, page numbers appear in upper right hand corner.

Do not include a running header(s) on pages.

After discussing a Table, Figure, or Graph in the body of your text, display it. Make sure it is formatted to APA 7th edition. Do not break a given table across multiple pages or STACK multiple Tables one after another without discussion between each.

Citation

Be extremely careful citing dictionaries or Wikipedia. Best bet, go into the Purdue Library Portal, no worries then. Reference all non-original pictures. The "F" in Figure or "T" Table is always capitalized in the body of the document When in doubt, cite and reference the thought or idea, or picture, table, graph too.

References

Do not construct a bibliography. Do NOT cite from a Dictionary, you can do better than that.

Reference list page(s) are titled "List of References" (centered) and are to be <u>single spaced within each</u> reference and <u>doubled spaced between each reference</u>. Indent after the first line of the reference

When referencing information/materials/reports from/via the Internet, be sure to include the "Retrieved on xx/xx/xxxx" date within the reference itself.

Pay close attention and adhere to APA 7th edition Table/Figure/Graph format and how to reference appropriately. The Research Problem Statement have four sentences. At a minimum start, three of the four sentences must be cited and referenced to support and validate your statement(s). Sentence four must be directly aligned with one of the National Academy of Engineers, 14 Grand Challenges.

TABLE 2

Example Words, Phrases, and Syntax NOT to Use	
Additionally	Many, Some
Ah	May
Almost	Might
Believe	Most (how much is most?)
Big/Small, Good/Bad, Happy/Sad	Much
High/Low	Often
Can be	Plenty
Could / Could be	Should
Easy/Hard, More/Less	Significant – explain/detail how
Frequently	Slow/Fast
Generally speaking	Modern/Old
He or She	Mature way
Heavy/Light	These
Here	They
Норе	This is
In	Very
It	We
Large or Small – Major or Minor	With
Long or Short	Strongest/Weakest
There was	Finest
Clearly or Meantime	Normal
A fraction	Unique or Usually
A lot	Simple/Hard

Appendix H: Example and Thesis CDRP List of Abbreviations

- ADSDI Abu-Dhabi Spatial Data Infrastructure
- AOT Aerosol Optical Thickness
- CSP Concentrated Solar Power
- DEM Digital Elevation Model
- DHI Diffuse Horizontal Irradiance
- DNI Direct Normal Irradiance
- DOE Department of Energy
- ECMWF European Centre for Medium-Range Weather Forecasts
- EIA Energy Information Administration
- GaAs Gallium Arsenide
- GHI Global Horizontal Irradiance
- GW-Gigawatts
- kWh/m² Kilowatt-hours per square meter
- MW-Megawatts
- NAE National Academy of Engineering
- NASA National Difference Vegetation Index
- NDVI Normalized Difference Vegetation Index
- Non-OECD Non-Organization for Economic Cooperation and Development
- NREL National Renewable Energy Laboratory
- PV-Photovoltaic
- ReCREMA Research Center for Renewable Energy Mapping and Assessment
- RH Relative Humidity

Bias Any trend or deviation from the truth in data collection, data analysis, interpretation and publication can cause false conclusions (Simundic, A.M., 2015).

Brake Pads The source of friction created by the kinetic energy of a vehicle that will slow it down to a stop (Bridgestonetire.com, n.d.).

Brake Disc (Brake Rotor) The disc attached to the wheel in a disc brake and what the vehicles brake pads clamp down on (Deaton, 2008).

Dynamometer An instrument or machine for measuring the power output and torque of a piston engine, turbine, or any other prime mover (Atkins & Escudier, 2013, p. 105).

Environment Protection Agency (EPA) An independent federal agency, created in 1970, that sets and enforces rules and standards that protect the environment and control pollution (EPA.gov, n.d.).

Mixed Methods Research The use of both quantitative and qualitative methods within a single methodology (Venkatesh, Brown, & Bala, 2013, p.2).

Original Equipment Manufacturer (OEM) A company whose goods are used as components in the products of another company, which sells the finished items to users (Kagan, 2019).

Qualitative Research Studies that focus on why and how things happen through personal experiences or how the test subjects feel (Austin & Sutton, 2014).

Quantitative Research Objective measurements and the statistical, mathematical, or numerical analysis of data collected through polls, questionnaires, and surveys, or by manipulating preexisting statistical data using computational techniques (USC Libraries, n.d.).

Research Instruments Measurement tools designed to obtain data on a topic of interest from research subjects (Des Moines University Library, n.d.).

Return on Investment Measures the gain or loss generated on an investment relative to the amount of money invested (Beattie, 2019).

Appendix J: Proposal Form for Thesis and Directed Project Students

https://polytechnic.purdue.edu/sites/default/files/files/Soet-Proposal-Form-9-20-19.docx

Appendix K: Statistics/Data Science Courses

The Following Statistics courses meet the SoET requirement and have been suggested by faculty as helpful to SoET students: Credit for no more than one IET 50700, STAT 50100, or STAT 51100 may be applied to the plan of study for the core requirement.

IET 50700 - Measurement and Evaluation in Industry and Technology

STAT 50100 – Experimental Statistics I

STAT 50200 – Experimental Statistics II

STAT 51100 - Statistical Methods

STAT 51200 – Applied Regression Analysis

IE 53000 - Statistical Quality Control

STAT 51400 – Design of Experiments

STAT 51200 - Applied Regression Analysis

STAT 52400 - Applied Multivariate Analysis

The following courses from other departments have been determined to meet the statistical criteria also. Consult with your Major Professor.

BIOL 58210 – Ecological Statistics CS 57800 – Statistical Machine Learning CE 61400 – Statistical and Econometric Methods I

Data Science courses, including the following, meet the criteria: (https://www.science.purdue.edu/data-science/academics/online-modules.html)

CS 59000 DEI – Data Engineering I CS 59000 DEII – Data Engineering II CS 59000 FCS – Foundations of Computer Science CS 59000 FDM – Foundations of Decision Making CS 59000 NCDS – Numerical Computing for Data Science STAT 59800PS – Probability and Statistics

Appendix L: Timeline for MS Students

Before Semester	 Reach out and Communicate with your Major Professor
1	• Arrive to campus at least one week before semester starts- speak with your Major Professor to agree on the
	date and time for meeting.
	• Attend SoET Graduate Student Orientation and the Graduate School's Orientation during the week before
	classes
	•Meet with your Major Professor to plan your first semester courses. Register for courses (often 9 credits),
	SoET Seminar, Stats Course, Elective Course, Research credits, or other as appropriate (Complete syllabus
	form (found in Appendix C) to register for research credits.
Semester 1	• Satisfy admissions conditions (submit official transcripts, etc.) per the Graduate School
	• Develop Plan of Study, based on discussions with Major Professor and your interests. Include a draft
	Committee, which can be changed later if needed. File plan of Study
	•Before the end of the semester, register for the following semester including research credits
	• Attend Required SoET Safety Training and Graduate Education Orientation (College and SoET)
Semesters 2-3 (up	•Meet with your Committee to discuss courses, research, and progress each semester
until the final	• Take courses and research credits - complete syllabus form for each semester of research credit registration
semester)	•Before the end of the semester, register for the next semester including research credits
Before Final	• Register as CAND 99100, 99200, or 99300 for the semester you plan to graduate
Semester	•Plan the process for the final exam with your Advisor and Committee
	• Ensure that your Plan of Study is complete, courses in your Plan are correct, and all degree requirements are
	met.
Final Semester	• Schedule Defense date with Major Professor and Committee. The Defense date must be at least 2 weeks
	before the end of the semester (see Graduate School Calendar) but usually prior to that to make time for
	updates.
	• Schedule a room for your Defense with the SoET Graduate Education Administrative Assistant
At least 2 weeks	• File Form 8 "Request for Appointment of Examining Committee" with the Grad School through MyPurdue
before Defense	Graduate School link
	 Send Thesis/Capstone Directed Research Project to all Committee members, following the SoET
	Thesis/Directed Project Checklist, ARWE document, and as the Graduate School's required format.
	 Prepare your Defense Announcement using SoET PPTX template provided by Grad Admin, Graduate
	Program Admin will announce date and time by email to all graduate faculty and SoET graduate students.
Day before	• Prepare and print any requested Rubric Forms for each Committee member from the SoET Graduate
Defense	Education Administrative Assistant
Day of Defense	• Present and defend your thesis/capstone directed research project. Make printed copies available.
When	 Make all corrections to document as suggested by the committee and major professor.
Thesis/Capstone	Filename for a thesis shall be, Firstname_Lastname_MSET-Thesis_August-2021.PDF. Filename convention
Directed Project	for Capstone Directed Research Project shall be Firstname_Lastname_MSET-CDRP_August-2021.PDF. Note:
completed	Month and Year shall be the month and year of final oral defense.
	• Send PDF document to major professor. Chair must review document for complete correctness.
	 Major professor will then communicate with SoET Graduate Education Administrative Assistant.
	• Chair of the SoET Graduate Programs will review for compliance of checklist, ARWE document, and
	graduate school format as needed. Document is not accepted for approval until signed off.
	• Complete electronic Thesis Acceptance Form (ETAF). Discuss with your advisor questions about Delay of
	Publication and Confidentiality.
	• Once approved, you will be able to log into to your Plan of Study portal and find the link to submit your
	thesis to HammerRR.
	• Upload thesis for Graduate School review at least 24 hours before the Deposit Deadline.
After graduation	• Keep in touch with your Major Professor and the SoET Grad Program Administrative Assistant

THE DEPOSIT PROCESS

[1] COMPLETE ELECTRONIC THESIS ACCEPTANCE FORM [ETAF] AND REQUIRED SURVEY(S)

The ETAF (also called Form 9) is available by logging into your myPurdue and proceeding to the Plan of Study portal. A helpful guide to initiating your ETAF is available here: <u>Student</u> Instructions for Initiating the Thesis Acceptance Form (PDF).

[2] SUBMIT YOUR ELECTRONIC THESIS DOCUMENT TO HAMMER RESEARCH REPOSITORY (HammerRR)Your document must be uploaded <u>at least 24 hours in advance of the Deposit Deadline</u> to allow staff to review your submission.

[3] PAY THE DEPOSIT FEE Master's Thesis Fee

For more detailed information and a full checklist, visit: <u>https://www.purdue.edu/gradschool/research/thesis/requirements.html</u>

Appendix N: Important University Offices & Their Duties

University Parking Services	Purdue ID Card Services Office
700 Ahlers Dr.	Hovde Hall, Room 14
West Lafayette, IN 47907	(765) 496-0444
(765) 494-9497	https://www.purdue.edu/business/car
https://www.purdue.edu/parking/	<u>d/index.php</u>
-Get a parking permit	-Get your student identification card
-Appeal a parking ticket	-Add money to your Boiler Express
	Account
ITAP (Information Technology at	Office of the Registrar
Purdue)	Hovde Hall, Room 45
Customer Service Center	https://www.purdue.edu/registrar/
(765) 494-4000	-Course registration issues
https://www.itap.purdue.edu/	-Commencement and diploma
-Ask questions about your email	questions
account	
-Get computer support	
-Buy discounted computers	
PUSH (Purdue University Student	Bursar's Office
Health)	Hovde Hall, Room 5
601 Stadium Mall Dr.	(765) 494-7570
(765) 494-1700	https://www.purdue.edu/bursar/
www.purdue.edu/push	-Pay tuition or fees
	-Aid disbursement/fee deferment
The Graduate School	Division of Financial Aid
Young Hall, Room 170	Schleman Hall, Room 305
(765) 494-2600	(765) 494-5050
https://www.purdue.edu/gradschool/	https://www.purdue.edu/dfa/
-Admissions and turn in original	-Financial assistance eligibility
documents	-Grants and loans
-Fellowship Office	-Part-time employment
-Student Records	
-Thesis and Dissertation Office	
-Ombudsman	
Engineering Computer Network	International Students and
(ECN)	Scholars (ISS)
https://engineering.purdue.edu/ECN	Schleman Hall, Room 136
Contact Us/Trouble Report	(765) 494-5770
https://engineering.purdue.edu/ECN/A	https://www.purdue.edu/IPPU/ISS/
boutUs/ContactUs	-Immigration services
	-International student orientation
	-Visa questions, issues

Office of the Dean of Students	Protect Purdue
Schleman Hall, Room 207	(765) 496-4636
(765) 494-6165	https://protect.purdue.edu/
https://www.purdue.edu/odos/	-COVID-19 Campus Information
-Find a student organization to join	-Vaccinations and testing
-Disability Resource Center	-Health Center information
Purdue Fire	Purdue Police
Clayton W. Dement Fire Station	Terry House
1250 W. Third St.	205 South Martin Jischke Dr.
(765) 494-6919	(765) 494-8221
https://www.purdue.edu/ehps/fire/	https://www.purdue.edu/ehps/police/

 Graduate Program Administrator Ms. Niedra McLeland, Knoy, Room 145, <u>nmclelan@purdue.edu</u> Contact when you need help or do not know where to start Contact when you have questions about anything- departmentally, university- wide, West Lafayette/Lafayette area, or pretty much anything else Scheduling oral defense and related processes Support – academic Plans of Study Registration Room scheduling for defense other graduate student meetings 	Administrative Assistant to the School Head – Nicky Federer, Knoy 145, federern@purdue.edu Items related to Dr. Burbank Faculty office assignment Purchasing and Mail questions Student Employment Forms Parking Passes
 ECN - <u>helpdesk@ecn.purdue.edu</u> Computer account Installing software Computer issues Required software for research and instructional use 	 PPI Business Office – TBD Concur travel questions Filling out travel forms Purchasing Payroll Information regarding student insurance, time off for students on assistantships, etc.
 Lab Supervisor – James Lane, Knoy Hall, Office is in the Hydraulics Laboratory, <u>lanejp@purdue.edu</u> If you TA an undergraduate course with a lab, they can help Lab equipment and space questions 	Radiological and Environmental Management Main Office (765) 494-6371 Home Landing Page https://www.purdue.edu/ehps/rem/index.html