



PROFESSIONAL SCIENCE MASTER'S

THE UNIVERSITY OF UTAH

PROGRAM HANDBOOK

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WELCOME

Since 2002, the Professional Science Master's program's guiding principle has been to offer a program of study for students who want to develop the science, technical and business skills required for management careers in industries, government agencies or non-profit organizations.

"Developing talent" is a major concern as technology companies along the Wasatch Front seek to grow or create businesses with potential for growth. These companies require individuals with strong technical capabilities, but the modern business environment using cross-functional teams also requires employees be effective communicators, understand how their contributions fit into their company's overall strategy and can lead projects to completion.

Professional Science Master's graduate students, working through their courses of study and the capstone Professional Experience Project, can address these needs. They have the opportunity to increase their scientific and technical knowledge, develop the business skills required for effective management, and then put both into practice.

Following our guiding principle, we will continue to improve the program and increase benefits to its students and the community of businesses that The University of Utah seeks to serve.

CONTACT INFORMATION

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INTRODUCTION

The Professional Science Master's (PSM) Program is a non-thesis, interdisciplinary program that fuses graduate studies in science and mathematics with professional skills such as business, management, communication, and data analysis. A key part of the PSM Program degree requirements is the development and completion of a Professional Experience (internship) project, which applies the science and business skills learned in the program curriculum.

The degree is awarded through the College of Science. The program is administered through The Colleges and Schools of Liberal Arts and Sciences.

DISCLAIMER

Efforts are made to ensure the information in this document is accurate. These policies may change as policies of the University of Utah and / or Graduate School change.

PROGRAM COMMUNICATIONS

EMAIL

Correspondence with the University of Utah (The Professional Science Master's program, The Graduate School, Faculty, etc.) should be conducted using your U-mail account. The PSM administration will send emails to students' U-mail accounts.

CANVAS

The PSM program maintains a CANVAS website and students in the program are expected to access this site. The site is used for:

- Sharing files related to the program
- Making announcements
- The PSM Calendar

Sharing Files

Files containing vital program information are organized into folders; documents such as the PSM Handbook and One Pagers are updated regularly. You should consult the program staff if you have specific questions or need assistance finding specific information.

Announcements

The Canvas site provides a convenient, direct method for program staff to communicate with students. Announcements include, but are not limited to:

- Upcoming Seminars
- Program deadlines or other important dates
- Career Fairs
- Job and Professional Experience postings from potential employers and sponsors

Calendar

PSM Program events and other opportunities such as seminars, Career Fairs, and professional networking events are added to the PSM Calendar.

PROGRAM DEGREE REQUIREMENTS

REGISTRATION

PSM graduate students register via The University of Utah's Campus Information System, cis.utah.edu, to secure their classes.

MAXIMUM HOURS

A schedule of nine hours is considered a full load for master's candidates. No candidate for a graduate degree is permitted to register for more than 16 credit hours in any single semester.

MINIMUM CONTINUOUS REGISTRATION

All PSM graduate students must be registered for at least one graduate-level course from the time of formal admission through completion of all requirements for the degree they are seeking, unless granted an official leave of absence (see Leaves of Absence section, below). Students are not expected to register for summer term. If students do not comply with this continuous registration policy and do not obtain an official leave of absence, they will be automatically discontinued from PSM graduate study. In this case, students will be required to reapply for admission to complete their program of study.

MINIMUM ACCEPTABLE GRADES

Failure to maintain a 3.0 or higher GPA for two consecutive semesters may lead to students being discontinued from the PSM Program after review by the Program Director and consultation with the Executive Committee and Dean of The Graduate School.

A grade below C- is not accepted for credit toward a graduate degree.

CREDIT/NO-CREDIT GRADING

Graduate students are granted the option, subject to approval by the PSM program and review by the Dean of The Graduate School, to enroll in courses and be graded on a credit/no-credit (CR/NC) basis instead of receiving a letter-grade.

The intent of the CR/NC option is to free students to extend their studies to areas outside their program of study and to take classes they otherwise might not take if they had to compete with students from that department for a letter grade. The following apply to taking classes CR/NC:

- The PSM program does not allow students to take CR/NC classes during their first year of study.
- CR/NC should not be used for any core course required by the PSM degree.

- After their first year in the PSM program, a student may request permission from the Program Director to register for no more than one class per semester on a CR/NC basis. The PSM program has flexibility to plan the best possible program with the student. The choice of courses to be taken CR/NC is subject to the approval of the Program.
- Graduate students should earn a grade of C- or better to be entitled to 'credit.' Students who do not wish to register for credit, either for a letter grade or CR/NC, should audit the course.
- Graduate students enrolled in a class for CR/NC may change to a letter grade any time before the Monday of the last week of classes. Letter grades build a graduate GPA; this is important if students apply or transfer to another institution.
- CR/NC is not counted towards the student's GPA. Taking courses CR/NC places "higher risk" on the remaining graded coursework.

TIME LIMIT

All work for the master's degree must be completed within four consecutive calendar years. On recommendation of the Program Director, the Dean of The Graduate School can modify this requirement. If the student exceeds the time limit and is not granted a modification or waiver, the PSM Program Director has the option to discontinue the student. Students whose studies have been interrupted for long periods of time and who have been granted extended time to complete their degrees may be required to complete additional courses or otherwise demonstrate that they are current in their field.

LEAVES OF ABSENCE

Students who wish to discontinue their studies for one or more semesters (other than summer term) must complete a *Request for Leave of Absence Form* (available from the Office of the Registrar). The form must be approved and signed by the Supervisory Committee Chair (if established) and the Program Director.

Requests for leaves of absence may be granted for up to one year or two semesters for circumstances related to:

- a serious health condition of the student or family member,
- parental leave to care for a newborn or newly adopted child,
- a call to serve in military service, or
- other compelling reasons that the student's department believes is in the best interests of both the student and the University.

Students who experience a medical condition associated with their pregnancy and need accommodations recommended by their medical provider should contact the University's Title IX Coordinator, who will work with the student, cognizant faculty, and administration to determine what accommodations are reasonable and effective.

The deadline to submit a Leave of Absence request to The Office of the Registrar is the last day to add or drop second-half courses of the leave semester. Leaves of absence are not granted retroactively. To be eligible for a Leave of Absence, all registered classes must be dropped prior to the add/drop deadline of the leave semester; failure results in the reporting of E or EU grades for all classes.

The period during which a leave of absence is granted does not count toward the period allowed to complete the degree. Leaves are granted for a maximum of one year. The leave of absence is void if a student registers for classes in a semester for which a leave was granted.

REQUEST TO CHANGE TO ANOTHER PSM DEGREE

The PSM program consists of 4 separate degrees, each with different requirements and prerequisites. A student wishing to change degrees must reapply to the program. New letters of recommendation may or may not be required; consult with the director prior to changing program.

COURSEWORK REQUIREMENTS

The Professional Science Master's Program is a graduate science degree; students in the program take approximately the same number of graduate-level science, computer science, and mathematics courses as traditional Master of Science programs require. Instead of a research requirement, PSM students take Professional Skills coursework and complete a Professional Experience Project.

The 36 credit hours required for the degree are fulfilled in a three-part framework:

STEM COURSES (18 CREDITS)

The coursework will be specific to the degree a student is seeking.

- Biotechnology
- Computational and Data Science
- Earth Resource Management
- Environmental Science

STEM Coursework includes both the "Core" classes that provide the foundational knowledge for students in their programs of study and related STEM electives.

Students in Environmental Science and Earth Resource Management are required to take a minimum of 2 classes that fulfil the Advanced Quantitative Skills requirement. One of these will be MST 6600 Applied Statistical Techniques; the other course will focus on computer modeling, data analysis, or programming. For information on which courses fulfill the Advanced Quantitative requirements, see the One-pager related to your degree.

PROFESSIONAL SKILLS (12 CREDITS)

The Professional Science Master's program offers courses that provide students with business, communication, and management concepts essential for leading activities in a variety of organizations outside of academia. Various leadership, business, and management skills are taught in a series of PSM courses (12 credit hours). Students must fulfill 9 of these hours with MST courses; additional Professional Skills credits may come from courses in writing, policy, communication, entrepreneurship, or courses offered from the David Eccles School of Business in place of one MST course. (These credits were previously referred to as Transferable Skills.)

PROFESSIONAL EXPERIENCE (3 CREDITS)

An essential component of this degree is a Professional Experience Project with a local employer in the STEM industry, a non-profit, or a government agency. These activities will engage students in real-world work situations involving technical problems, teamwork, communication skills, and decision making. These projects generally take more than a single semester to plan and execute. In the semester when a student is completing their professional experience project, they should be registered for MST 6975 (3 credit hours).

Students who are authorized by the Program Director to take a capstone class from another department to complete their Professional Experience Project will register for that class and one credit hour of MST 6975.

PETITION TO TAKE UNLISTED CLASSES

Students who identify a course not listed in PSM materials (including "One-Pagers" or the Course Availability Spreadsheet) can petition to have that course approved as part of their program of study. Students must complete the following steps:

1. Send the following information to the Program Director in the body of the email:
 - Course Prefix, Course Number, and the course description from the catalog.
 - A brief statement that addresses the request and how it relates to your professional goals.
2. Attach a recent copy of the syllabus for the course.

TRANSFER CREDITS AND CREDITS EARNED BY NON-MATRICULATED STUDENTS

You must submit a petition if you wish to receive credit for non-matriculated credits or transfer of credits from another institution. Credits earned by non-matriculated students may or may not apply to the PSM graduate degree program. Students should follow the Petition for Curriculum Change Instructions above, and credits may not be officially transferred until a student's supervisory committee is in place.

For non-matriculated credits, up to 15 credits of courses taken no more than 3 years prior and in which the student received at least a B may be counted. For graduate credit from another regionally accredited institution, up to 6 credits may be transferred- provided that the student earned a grade of a B or higher, the credits are approved by the program director, and the credits were taken within 4 years of admission to the PSM. The total sum of prior credit allowed (nonmatriculated, transfer, and graduate courses taken as an undergraduate at the U) may not exceed fifteen credit hours for a single Master's degree. Exception to either of these requirements must be requested by the Program Director or supervisory committee chair and approved by the Dean of The Graduate School.

ACADEMIC MISCONDUCT

The PSM Program takes cases of academic misconduct seriously and follows the policies of the University of Utah for academic misconduct and sanctions. The following information is from the University of Utah's Code of Student Rights and Responsibilities:

“Academic misconduct” includes, but is not limited to, cheating, misrepresenting one's work, inappropriately collaborating, plagiarism, and fabrication or falsification of information. It also includes facilitating academic misconduct by intentionally helping or attempting to help another to commit an act of academic misconduct.

“Academic sanction” means a sanction imposed on a student for engaging in academic or professional misconduct. It may include, but is not limited to, requiring a student to retake an exam(s) or rewrite a paper(s), a grade reduction, a failing grade, probation, suspension or dismissal from a program or the University, or revocation of a student's degree or certificate. It may also include community service, a written reprimand, and/or a written statement of misconduct that can be put into an appropriate record maintained for purposes of the profession or discipline for which the student is preparing.

Students have the right to appeal academic sanctions. The Code of Student Rights and Responsibilities documents the appeal process.

PROFESSIONAL EXPERIENCE PROJECT

A crucial part of the PSM Program degree requirements is the development and completion of a Professional Experience Project. The expectation is that students do more than merely serve as an intern. The PSM program requires graduate students to plan and execute a project with a sponsor external to the university setting, usually a local industry partner, government agency, or non-profit organization. The process includes:

- Identifying a project relevant to the sponsor and meeting the University's requirements for a master's project
- Assembling a Supervisory Committee
- Working with the sponsor in proposing a solution
- Implementation of the project
- Evaluating the effectiveness of the solution

Generally, the project requires 2 semesters: once in which students lay all the groundwork for their final project, including the proposal, and a second semester in which they complete the project, submit their final report, and give a final presentation.

The project scope will vary from project to project; however, most projects require a time commitment of 10-17 hours per week. This weekly time commitment translates into 150 — 250 hours for a 15-week semester. The project must include a science (or STEM) component and a professional skills (business) component related to their program of study. Students enroll in MST 6975 to receive credit for their project.

The deliverables associated with planning and completion of the Professional Experience Project are:

- A written pre-proposal (1 page)
- Supervisory Committee information
- Written proposal
- Proposal Presentation
- Professional Experience Project Report
- Professional Experience Project Presentation

Some students will have the option to complete a graduate certificate as part of their studies, which may include a capstone project. That project may be completed in place of the traditional PSM Professional Experience Project. The process and deliverables will be different, see pages 18-19 for a basic outline of this option and the non-credit Project Planning Canvas course for detailed information.

For a flow chart overview of the Professional Experience Project see Figure 1.

Professional Experience Project: OVERVIEW

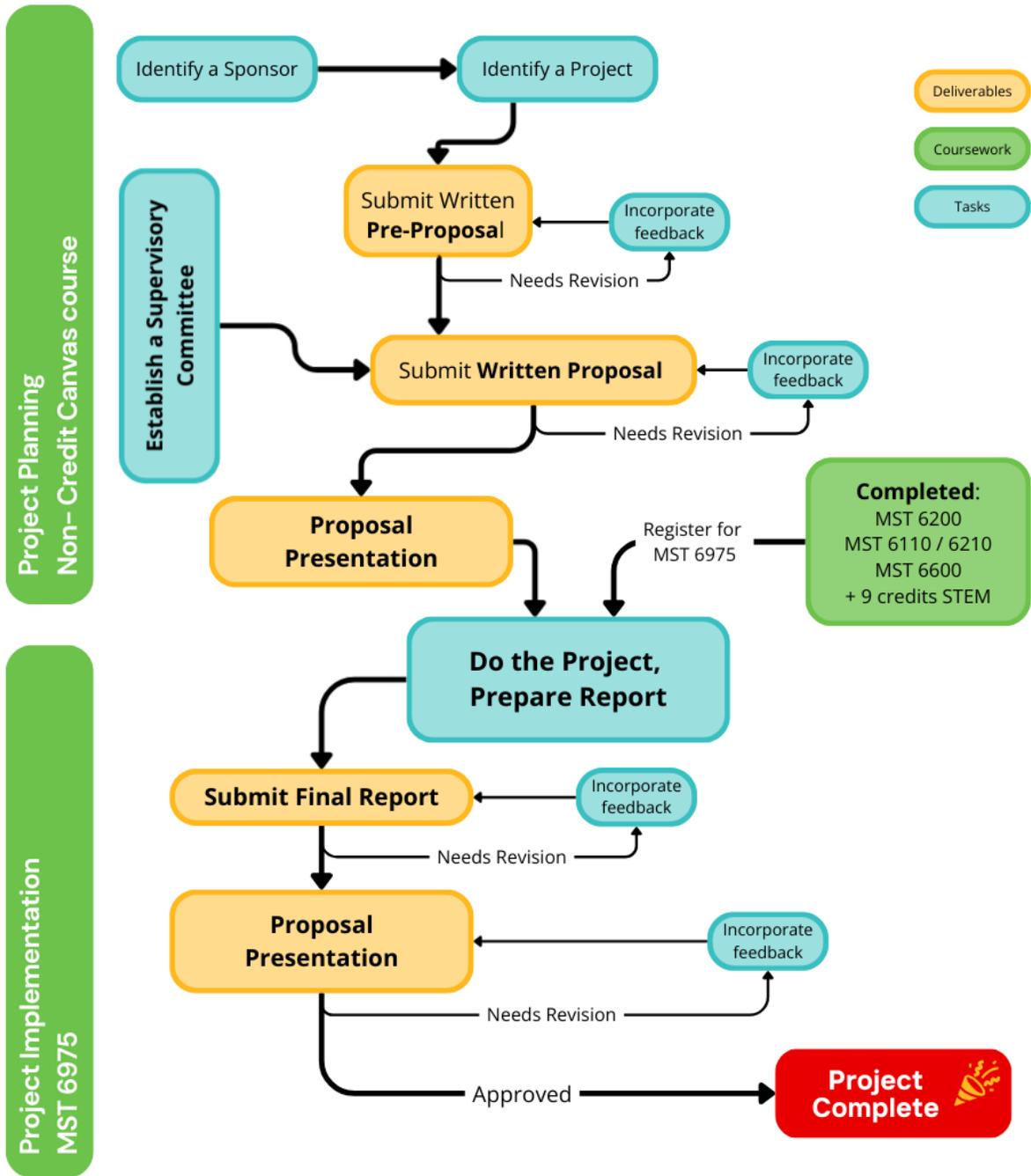


Figure 1 PROFESSIONAL EXPERIENCE PROJECT OVERVIEW FLOW CHART. Students Identify a Project and Sponsor and engage a Supervisory Committee. Deliverables include a written pre-proposal, a proposal, a proposal presentation, a written Professional Experience Report, and a Final Presentation.

PROFESSIONAL EXPERIENCE PROJECT PLANNING

To aid students in planning their Professional Experience Projects, there is a non-credit Project Planning course on Canvas containing background information and milestones. During the planning period, students should ensure they take the necessary prerequisite courses, identify a Sponsor and project, form a Supervisory Committee, submit a pre-proposal, a proposal, and give a proposal presentation. More information on each of these steps follows; a flowchart of the Professional Experience Project Planning can be found in Figure 2.

PREREQUISITES

Prior to taking MST 6975 Professional Experience Project and starting their Professional Experience Project, students must take MST 6200 Professional Development and either MST 6110 Business Development or MST 6210 Operations and Project Management, plus 9 additional STEM credits.

Students will need a permission code to take MST 6975 Professional Project; in order to receive this code, they will need to complete all the milestones in the non-credit Project Planning course on Canvas.

IDENTIFYING A PROFESSIONAL EXPERIENCE OPPORTUNITY

Graduate students are responsible for identifying a sponsoring organization or company and developing a suitable project with a supervisor of the organization or company. Students are encouraged to seek out and explore Professional Experience opportunities as soon as possible after entering the PSM Program.

SUPERVISORY COMMITTEE

Supervisory Committee must be in place prior to beginning the Professional Experience Project. The role of the Supervisory Committee is to:

- Provide input on the student's Professional Experience proposal
- Attend the proposal presentation
- Evaluate the written report
- Attend project review meetings
- Attend the final presentation
- Assign a grade to the Professional Experience project

Graduate students are responsible for assembling their supervisory committee and submitting their names to the Instructor of MST 6975.

The Supervisory Committee consists of three members with the majority being tenure-line faculty at The University of Utah. All University of Utah faculty members (tenure-line, career-line, adjunct, visiting and emeritus) are eligible to serve as members of the Supervisory Committee; one Committee member may

be external to the U of U. Committee members must hold the terminal degree in their field or have demonstrated expertise relevant to the student's project. A tenure-line faculty member serves as Chair of the Supervisory Committee.

Non-University of Utah faculty can serve as a member of a Supervisory Committee if they hold an advanced degree and have professional experience in a relevant subject area. The student must email a formal request to the PSM Program Director, including a current Curriculum Vitae of the proposed member and justification for their presence on the committee.

It is the responsibility of the student to approach prospective committee members to determine their willingness and availability to serve in such a capacity. Faculty members have the right to refuse to sit on a student's supervisory committee for justifiable academic reasons.

* Additional general information regarding assembling a supervisory committee can be found at the following [Graduate School webpage](#).

PRE-PROPOSAL

Once a potential sponsor and project have been identified, a student submits a one-page Professional Experience Pre-Proposal including details on the "Project Objectives" and "Project Description," emailed to the instructor of MST 6975 and / or Program Director. The student will receive feedback on the scope of the project; where appropriate, potential Supervisory Committee members may be recommended based on relevant expertise. Once approved, students proceed to write the formal proposal. Students are encouraged to seek input from the PSM staff and instructors.

Students should carefully review the Professional Experience Proposal Guidelines. The written Professional Experience Proposal should include both a STEM and professional skills component.

WRITTEN PROFESSIONAL EXPERIENCE PROJECT PROPOSAL

The written Professional Experience Proposal is submitted to the Supervisory Committee for review and feedback. This document should be submitted approximately 6 weeks prior to the beginning of the project to allow sufficient time for review. A well written proposal that follows the program guidelines can be approved in a shorter timeframe.

Final versions of the proposal are submitted to your supervisory committee at least 1-2 weeks prior to your Professional Experience Proposal Presentation.



Figure 2. PROFESSIONAL PROJECT PLANNING FLOW CHART. Before beginning their project, a student must identify a sponsor, submit a pre-proposal, assemble an approved Supervisory Committee, submit a proposal, and give a proposal presentation. The non-credit Project Planning course on Canvas goes into great depth on the subject.

PROFESSIONAL EXPERIENCE PROPOSAL PRESENTATION

Graduate students will coordinate a meeting time to present the proposal to the student's Supervisory Committee. Students should also invite the Instructor of MST 6975, Program Director, Program Manager, and relevant advisors to the proposal meeting. Required attendees are the Supervisory Committee and Program Director, who serves as facilitator.

PROFESSIONAL EXPERIENCE PROJECT IMPLEMENTATION

Once the milestones in the non-credit Project Planning Course are completed, students will be able to register for MST 6975 and the Implementation phase of the project begins. For a flowchart outlining Professional Experience Project Implementation, see Figure 3.

FINAL PROFESSIONAL EXPERIENCE PROJECT REPORT

The final draft of the report should be submitted approximately one month prior to your anticipated final presentation, emailed to the Supervisory Committee, Program Director and/or Instructor of MST 6975. Ideally, graduate students will provide a final report for review that only needs minor edits.

After reviewing the final draft report with the Supervisory Committee via email comments and feedback, the graduate student will schedule and present their Professional Experience Presentation. The Supervisory Committee, Instructor of MST 6975 and/or Program Director are required to attend.

After the Professional Experience presentation, the student will receive feedback. Revisions to the final report may still be required based on comments from the Supervisory Committee.

Students will submit a copy of the final and approved version of the Professional Experience Project Report to the Instructor of MST 6975. The Professional Experience Report is a public document.

PROFESSIONAL EXPERIENCE PRESENTATION

Confirm the date, time and location of the Final Presentation with the Supervisory Committee, the Instructor of MST 6975, and the Program Director.

After the final presentation and discussion, students will incorporate any additional feedback and comments at the request of the Supervisory Committee. The Supervisory Committee will then approve the final report and recommend a grade.

Note, the following documents are DELIVERABLES:

- Professional Experience Project Presentation
- Professional Experience Project Report

Professional Experience Project: IMPLEMENTATION

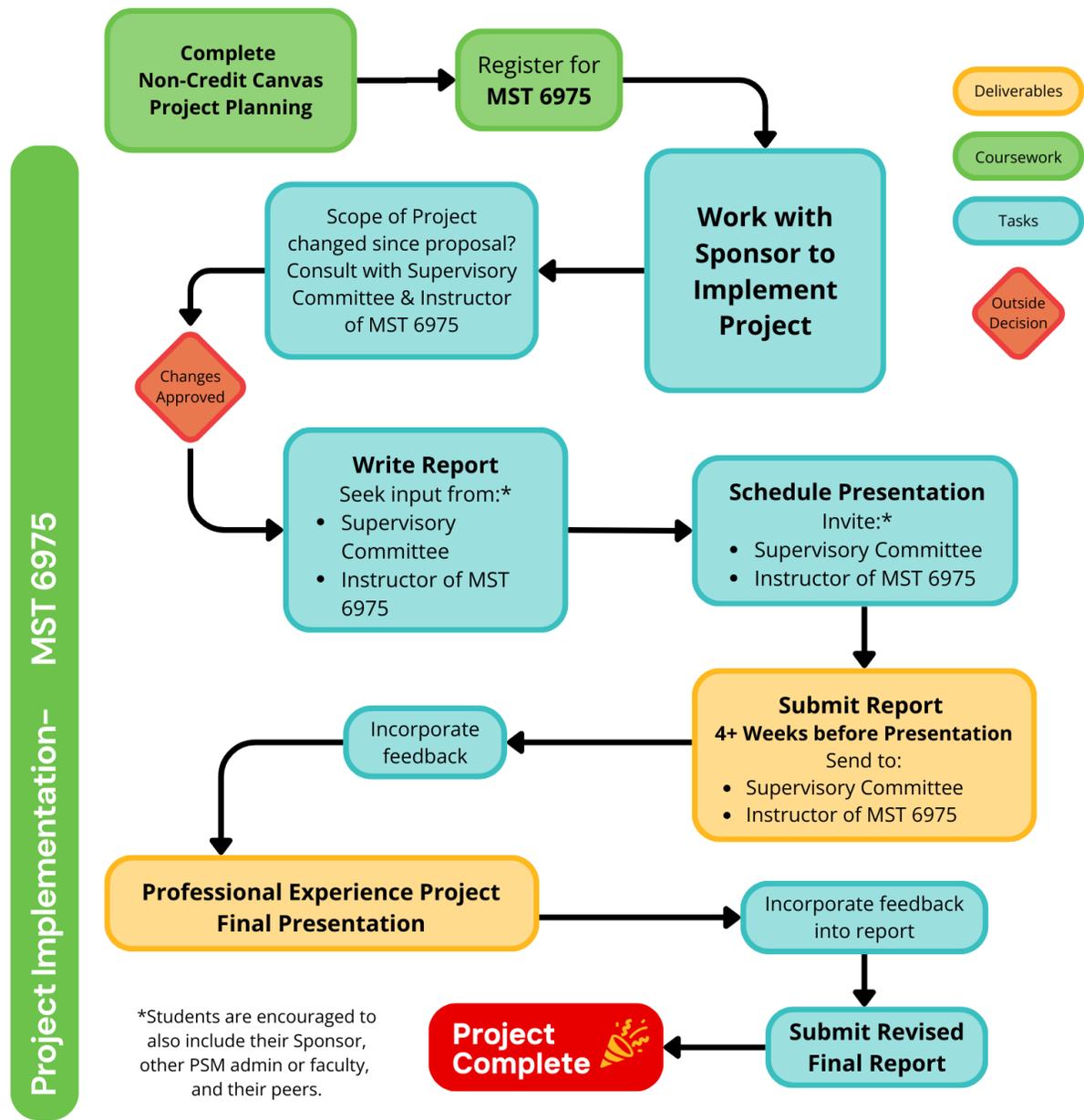


Figure 3. PROFESSIONAL EXPERIENCE PROJECT IMPLEMENTATION FLOW CHART. Implement your Project, keeping all parties informed of any evolving objectives or methods. Be sure to submit your written report at least 4 weeks prior to your presentation so that you can incorporate any feedback.

CERTIFICATE CAPSTONE CLASS OPTION

Some students will have the opportunity to complete a Graduate Certificate during the course of their master's degree. Generally, these certificates include a capstone project and class. If a student wishes to take that course in lieu of doing a more typical Professional Experience Project, the following requirements must be met:

- Admission to the Graduate Certificate
- Approval from the Program Director
- All prerequisite courses completed, both for the capstone course and MST 6975, including the non-credit Project Planning course on Canvas
- Permission from the instructor of the capstone course

Students in a capstone course will be expected to take one credit of MST 6975 and attend the 3 class meetings, as well as submit an Executive Summary and Reflection to the Instructor of MST 6975.

Detailed information about this option is included in the non-credit Project Planning course on Canvas.

For a flowchart outlining the Certificate Capstone Class Option, see Figure 4.

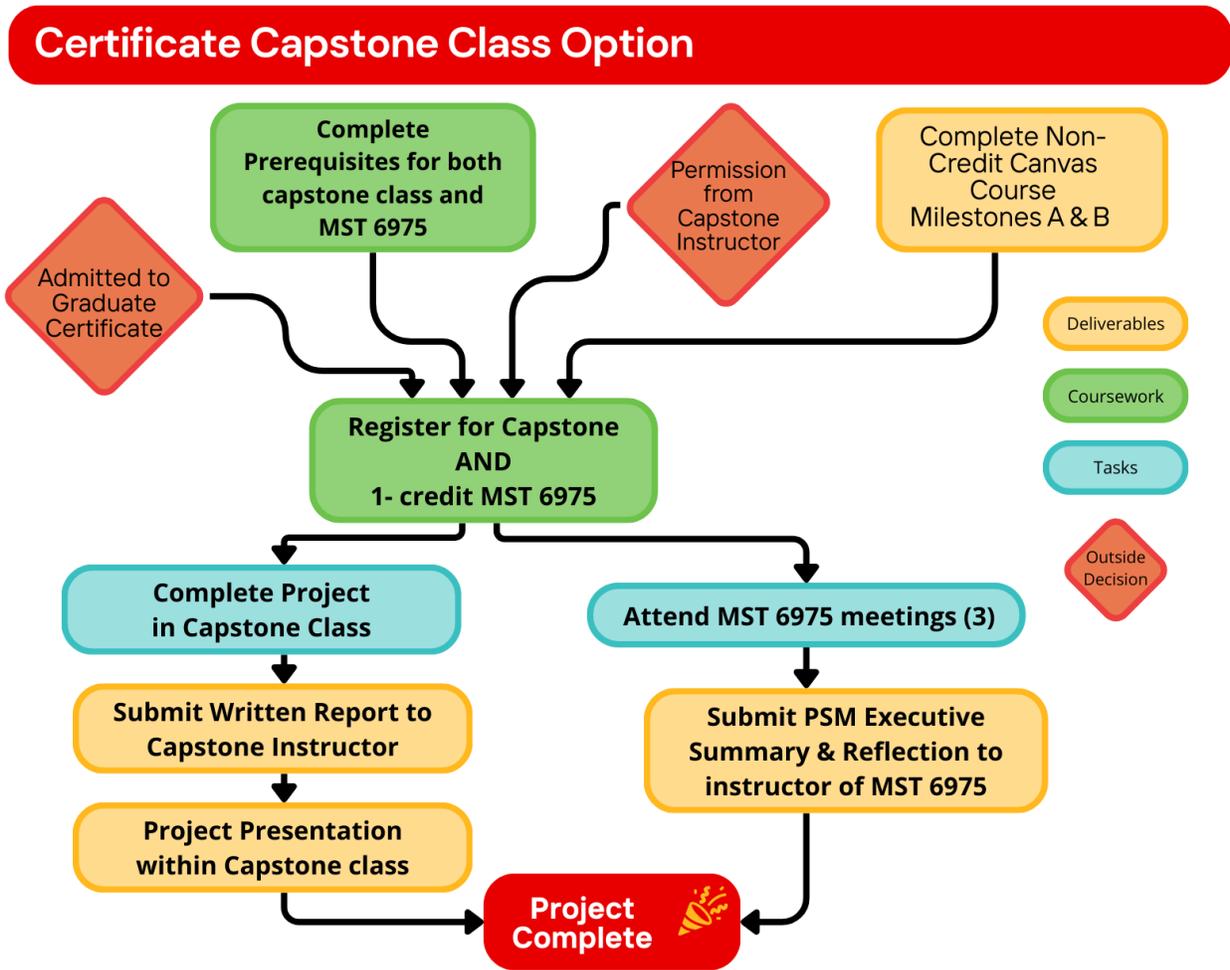


Figure 4. CERTIFICATE CAPSTONE OPTION FLOW CHART. To qualify for this option, students must be admitted to the graduate certificate associated with the capstone course, obtain approval from the PSM Program Director, complete all necessary prerequisite courses, and have permission from the capstone instructor. Students will register for both the capstone course and one credit of MST 6975; they will be expected to attend class and submit an executive summary and reflection as well as completing the requirements of the capstone class.

GRADUATION

Students complete the Application for Graduation in the first week of the semester in which they will graduate; important dates are published online. A flow chart is provided in Figure 5.

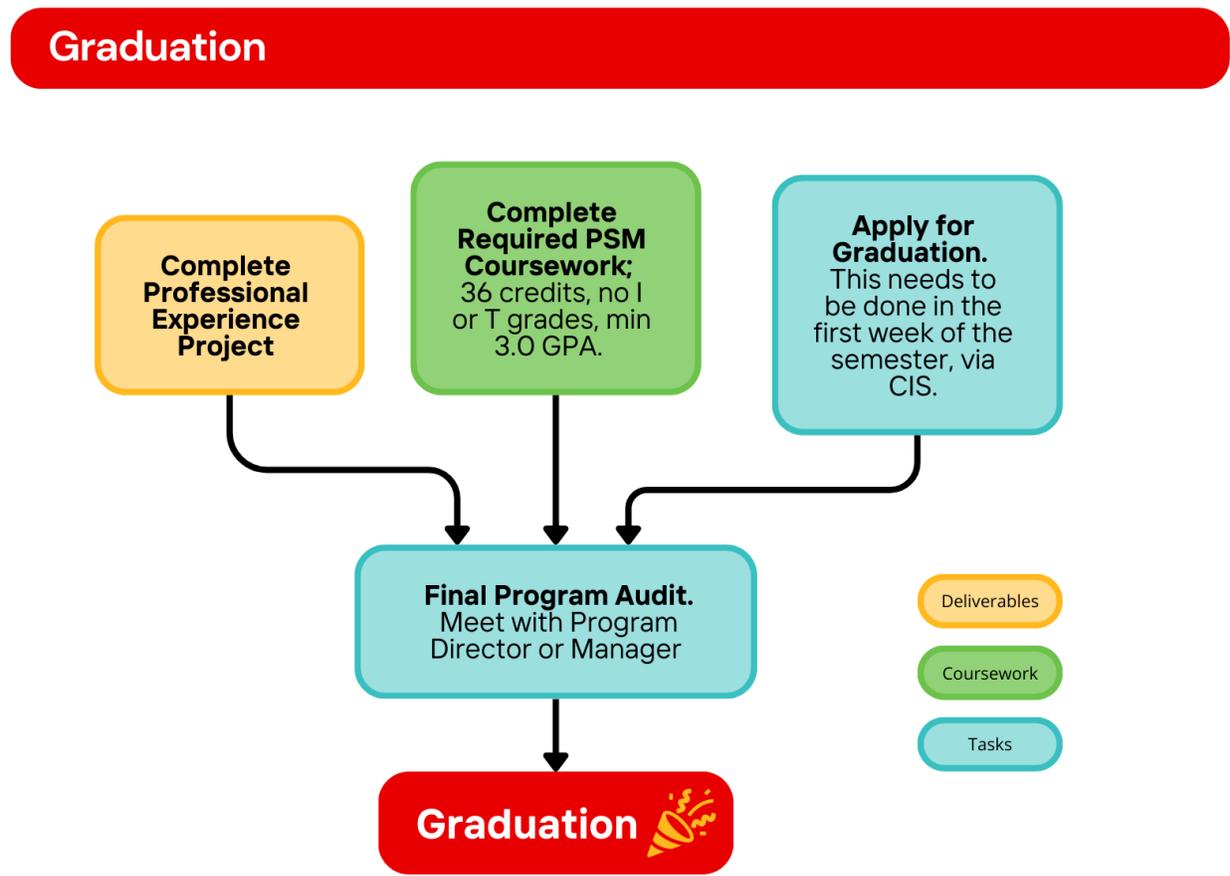


Figure 5. GRADUATION FLOW CHART. In order to graduate, students must complete their coursework and Professional Experience Project as well as apply for graduation. Early in their final semester or even before then, they should meet with PSM Administration to ensure everything is in order.