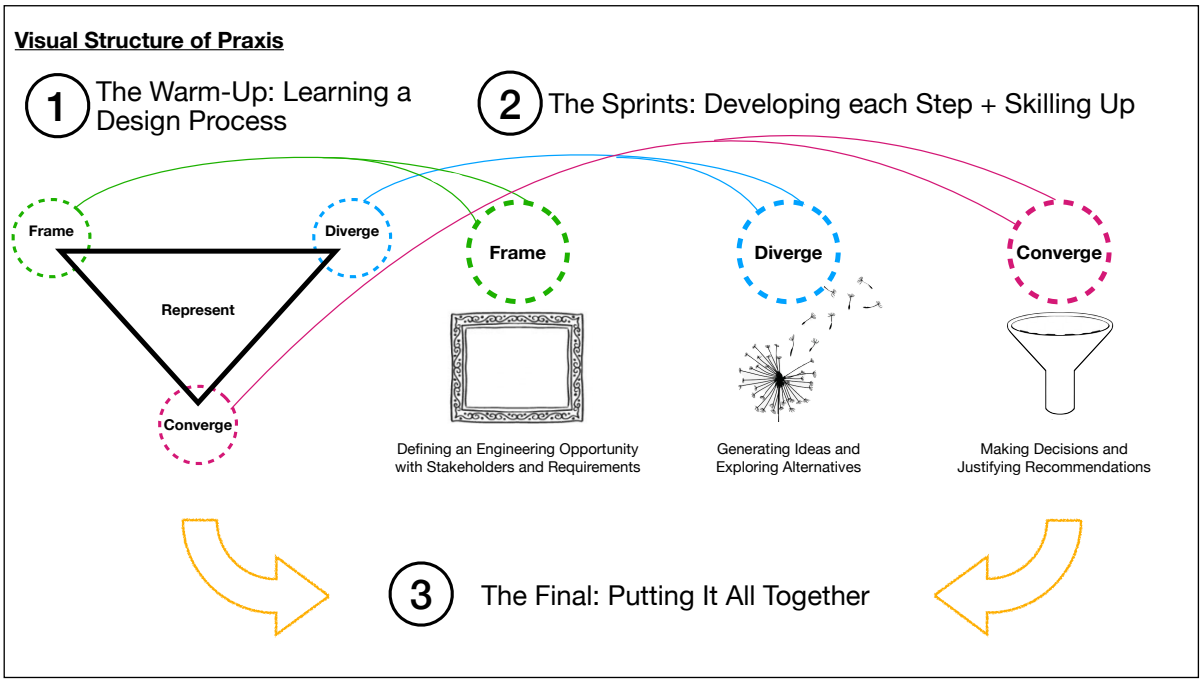
Praxis I Course Outline

This document should be understood in conjunction with the Praxis I Syllabus. This document explains assignments and schedules, whereas the Syllabus outlines policies and expectations.

Note that the specific items and dates listed in this Outline may change based on the needs of the course.

Praxis I is structured into three "sprints" based on the foundational design process, as shown in Figure 1. Each sprint results in an individual and/or team deliverable.



1. Teaching Team

The Teaching Team in Praxis I integrates members from the Division of Engineering Science, the Engineering Communication Program (ECP), and Troost ILead. Lectures will be given primarily by the various Instructors, while teams of Studio Instructors and Teaching Assistants will facilitate the Studios.

Course Instructors

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Praxis teaching team members do not usually offer specific set hours, but anyone in the teaching team is happy to meet with students simply by scheduling a meeting. Although the teaching team tries to be available and accessible, appointments should be scheduled at least one business day prior to the desired time.

Selected members of the Teaching Team are also monitoring a shared course email account (praxis.engsci@utoronto.ca) that you can use to communicate with the Teaching Team en masse. This account will be monitored generally and specifically during Lecture

2. Deliverables and Distribution of Grades

Due Date	Deliverable	Weight	Submitter
2020–09-20 @ 2200 EDT	Welcome to NΨ Survey	*Required for completion*	Individual
2020-09-15 to 17 in Studio	Self Introduction Visualization	*Required for completion*	Individual
2020-10-03 @ 2200 EDT	Personal Engineering Recommendation	10%	Individual
2020-10-24 @ 2200 EDT	Design Brief	15%	Team
2020-10-26 @ 2200 EDT	Sprint Analysis #1	5%	Individual
2020-11-06 @ 2200 EST	Candidates + Tool Critique	10%	Team
2020-11-17 @ 2200 EST	Sprint Analysis #2	5%	Individual
2020-12-01 to 03 in Studio	Design Critique	15%	Team
Ongoing	Studio and Team Engagement	10%	Individual
2020-12 in Exam Schedule	Final Exam	30%	Individual

2.1. Welcome to NΨ Survey

Students must complete the Welcome to NΨ Survey before Studio 03. The survey results will be one source of data used algorithmically to form teams in both Praxis I and Praxis II, so failure to complete the survey may result in not being assigned to a team (so will result in students being unable to complete Phase II).

2.2. Self Introduction Visualization

Each student must prepare a single slide (PowerPoint, Keynote, etc.) that represents themselves to be shared with others in their studio for the first studio. This should be brought into the first studio and will be shared and discussed as part of introductory activities.

2.3. Personal Engineering Recommendation (Individual)

The PER provides students with a first opportunity to practice thinking like an engineering designer. Students will establish engineering requirements to make a single design decision at the personal level. In this way, they will demonstrate and apply an engineering design mentality, including structured exploration and research, logical argument and explanation, and formal approaches to selection. This assignment is mandatory.[1]

2.4. Design Brief (Team)

The Design Brief is a concise written document that describes an opportunity framed in engineering design terms. Each team will produce one Brief, which will inform the activities leading to the Design Alpha Release, Design Critique, and Design Report. This assignment is mandatory.

2.5. Sprint Analysis (Individual)

After each of the three sprints, students will write a short analysis of specific aspects of their work together as a team. One sprint analysis follows each of the Framing Sprint (Design Brief), the Diverging Sprint (Candidates + Tools Critique), and the Converging Sprint (Design Critique). The final Sprint Analysis will be written as part of the Final Exam.

2.6. Candidates + Tools Critique (Team)

In the Diverging Sprint, teams will focus on 1) using a variety of ideation tools and 2) assessing the usefulness of those tools in this context. Teams will create potential design concepts in answer to the high level objectives of a Design Brief to present to the Teaching Team. When presenting their Design candidates, teams will also provide a critique of the various ideation tools they used. Such a critique may include whether the tool helped the team (or not) expand their pool of ideas, helped them to un-anchor their thinking, include team members' ideas, etc. This assignment is mandatory.

2.7. Design Critique (Team)

During the Design Critique each team will make a recommendation about a design concept. The team will provide drawings, prototypes, calculations, and whatever other resources will help to explain or clarify the design. In the Critique, teams will interact with their assessors in an *ad hoc* "Question and Answer" format. This assignment is mandatory.

2.8. Studio and Team Engagement (Individual)

Due to the importance of teamwork in this course, students will be assessed on their commitment to the work in the studio and their engagement with their team. Part of this grade will be assessed by teammates for each other.

2.9. Final Exam (Individual)

The Final Exam assesses students as aspiring engineering designers. During the exam students will be permitted to access selected resources as announced in lecture before the exam. This assignment is mandatory.

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[1] Students who do not complete assignments designated as "mandatory" will receive an incomplete (INC) grade in the course until the assignment is completed or a failing grade is assessed.

3. Studio Schedule

Studios bridge the material presented and discussed in lecture with the course deliverables. Each Studio has specific learning objectives and consists of targeted activities that develop skills which contribute to upcoming deliverables.

Week Starting	No.	Core Studio Activities
2020-09-14	01	Meeting, Greeting and Arguing
2020-09-21	02	Requirements and Decision Making
2020-09-28	03	Engineering Credibility: Research and Metrics
2020-10-05	04	Teaming + Walkabout
2020-10-12	05	What Makes a Good Opportunity and Design for X
2020-10-19	06	Write What You Can Workshop
2020-10-26	07	Beyond Brainstorming: The Diverging Marathon
2020-11-02	08	Double Diverging—using what is settled to find new
2020-11-09	09	Wellness Week
2020-11-16	10	Converging Tools—Multi-criteria Decision
2020-11-23	11	Verifying Concepts
2020-11-30	12	*In-Studio Delivery of the Design Critiques*

In Phase II each team is expected to complete a **full** iteration of a simplified engineering design process. **This will involve team work both in and outside of Studio.** Because of this pace students and teams must carefully manage, and integrate, both their activities and deliverables. They must also be careful to consciously and deliberately improve their facility with the skills associated with each process step.