

# Praxis II Course Outline

*This document should be understood in conjunction with the Praxis II Syllabus.  
Note that the specific items and dates listed in this outline are tentative and may change.*

Praxis II is divided into two phases. In Phase I, student teams identify and engage with a community located within the Greater Toronto Area (GTA). Based on those interactions, and on additional research and exploration, each team develops a Request for Proposals (RFP) on behalf of their community.

In Phase II teams design a proposed solution to an opportunity framed in a Phase I RFP<sup>1</sup>. Praxis II culminates in a public Showcase at which each team demonstrates their proposed solution and the process that led to it.

## 1. Deliverables and Distribution of Grades

Deliverables with a weight of “formative” are included to provide the Teaching Team with structured opportunities to provide feedback to the submitter(s). These deliverables also contribute directly, through content and the opportunity to practice specific engineering design and communication skills, to later “summative” deliverables.

Due Date	Deliverable	Weight	Submitter
<b>Phase I – Finding and Framing</b>			
2017-01-15 @ 2000	Team Profile	2% 2%	Team Individual
2017-01-29 @ 2000	Field Notes	5%	Individual
2017-02-05	Design Brief	4%	Team
2017-02-19 @ 2200	Request for Proposal (RFP)	25%	Team
<b>Phase II – Solving</b>			
Studio week of 2017-03-20 <i>A copy of the presentation must be submitted 24 hours prior to Studio</i>	Beta Release • Presentation                      • Prototype(s) • Preliminary Verification or Validation	10%	Team
2017-04-12 <i>The One-Pager and a PDF copy of the Poster must be submitted on 2017-04-10 @ 1200</i>	Showcase • One-Pager                      • Poster • Prototype(s)                      • Interaction • Overall Verification or Validation	30%	Team
<b>Individual</b>			
Staged Delivery • URL Identification 2017-01-15 @ 2000 • Introduction, ESEC lecture extension, and Personal Design Process 2017-02-26 @ 2000 • Complete Portfolio 2017-04-13 @ 1800	Engineering Design Portfolio • Personal Design Process • Evidence of Design work throughout first year • Self Assessment	0 or -1%  2%  20%	Individual

<sup>1</sup> That RFP may be theirs or may be one authored by a different team. The ratio of teams working on their RFP to teams working on another team's RFP will be approximately 1:8.

## 1.1. Team Profile (Team + Individual)

This is a short document aimed to help your team define itself quickly for a public audience (possible communities in the GTA). The document comprises one (1) team page, plus one (1) page per team member. Each individual is responsible for his/her member page, the team as a whole is responsible for the team page.

### 1.1.A. Team Page

The team page should be a clear definition of your team, its objectives and values, and the nature of the engineering work you propose to undertake in Praxis II. It should document your collective experience and expertise in a way that honestly represents your team's abilities and demonstrates your unique characteristics. This page should be of a quality that you could send it to a Community group and have them understand your team, and want to interact with you.

### 1.1.B. Individual Pages

The individual page created by each team member should function in two ways:

1. It should introduce the individual in terms of specific skills and abilities that he/she brings to the team. Students may wish to draw on a résumé or Personal Baseline from Praxis I to create a clear explanation (so more than the list in a résumé) of the specific skills and abilities that they offer to a team, and to a project. This may include strengths in design or communication, such as an ability to ensure code compliance, an ability to use specific modelling tools, or your awesome abilities with PowerPoint.
2. It should introduce the individual's goals, priorities, and focus (foci). This is particularly important for the team itself, as it will help the team to negotiate and understand each other quickly and efficiently as the team develops the team page.

## 1.2. Design Brief (Team)

The Brief assignment is similar to the brief assignment last semester. Specifically, however, it asks you to write a short version of your RFP. It should include at minimum:

- introduction to the community
- definition of the opportunity
- background research about the community
- analysis of stakeholders
- analysis of reference designs
- high-level and detailed-level objectives for the opportunity (but not necessarily constraints, criteria, and metrics)

The Design Brief will be put to the test in a Fishbowl Design exercise in Studio 05, and assessed in terms of a) the quality of the opportunity, and b) the development of the opportunity.

## 1.3. Field Notes (Individual)

Each member of a team is expected to engage with a potential community. As evidence of this work, the field notes should include:

- Conversations and/or correspondence: these might include the transcripts (or recordings) of conversations with a community or stakeholder group, e-mail correspondence, notes from conversations (either from in-person meetings or telephone conversations).

- **Observations:** these are notes taken while observing the community in action — taken on-site to learn to understand and listen to the dynamics of the community.
- **Evaluation:** this involves the interpretation of the interaction with the community. You are making claims that should be justified by what you have seen or what has been said.
- **Next Steps:** these may range from active involvement — who to speak to next, when an observation can take place — to close out if no opportunity exists.

## **1.4. Request for Proposals (Team)**

The Request for Proposals (RFP) builds conceptually on the Praxis I Design Brief deliverable and directly on the Praxis II Design Brief. It challenges students to frame an engineering challenge to the levels expected by industry and government. Success in the RFP assignment requires that teams identify and frame an engineering design challenge, identify and directly engage with stakeholders, consult with relevant codes and standards, and develop comprehensive engineering requirements. The target audience for an RFP is the engineers who will submit proposed design concepts that meet the requirements and address the stakeholder needs codified within the RFP.

## **1.5. Beta Release (Team)**

The Design Beta Release is the first unveiling of each team's proposed design in response to their assigned RFP. The Beta Release consists of both a formal presentation and one or more prototype(s) of the proposed design. Each team must submit a copy of their presentation slides at least 24 hours before their Studio. At this stage in the design process, each team should demonstrate preliminary validation (are stakeholder needs being met) or verification (are the requirements actually being met).

## **1.6. Showcase (Team)**

The Design Showcase is a public event during which student designs, supported by prototype(s), will be reviewed and evaluated on both their technical and nontechnical merits. Students will concurrently be evaluated on their communication abilities through the media of written summary, posters, and oral presentations. For the Design Showcase, each team must produce four deliverables:

1. A full-colour, large-format, single-sheet poster; the costs of poster production are borne by the team
2. One or more prototypes of their design(s)
3. A flexible presentation that can be tailored to the needs of a variety of audiences ranging from curious public guests to assessing members of the Teaching Team to the media
4. A one-page project summary suitable for a general audience

## **1.7. Online Engineering Design Portfolio (Individual)**

In Praxis II, all students shall develop a design portfolio that publicly profiles their engineering design work. The portfolio is assessed in three staged deliveries to ensure that it does not get left to the end of term, and that students get some preliminary feedback on components of their portfolio. Students may want to consider summer employers as a possible stakeholder and develop the initial parts of their Portfolio on a timeline that would facilitate in finding an engineering-related summer job.

### **1.7.A. URL Initiation**

Each student must provide a URL for their individual portfolio site. Students are encouraged to create a “Design portfolio coming soon” placeholder to set up the space for future public viewing.

### **1.7.B. Introduction, Engineering Design Process, and ESEC Presentation Extension**

1. Introduction: Students should develop a “first page” of their portfolio website that introduces them to a viewer. This may be a revision of the Individual Profile (1.1.B) and/or may make use of Personal Baseline results from Praxis I.
2. Praxis I introduced students to a simplified design process (FDCR). In Praxis II, students are expected to draw on the design literature to develop their own engineering design process that is adapted to enable them to capitalize on their design strengths and compensate for their weaknesses — or emphasize the areas that require special care and attention. This should be structured as a visual representation with text explanation of significant features.
3. For one of the presentations at the Engineering Science Education Conference on 2016-01-20, write an extension of one of the lectures that builds on, provides further research into, or explains a key concept from one of the lectures. Max. 500 words.

### **1.7.C. Design Portfolio Submission**

At the end of the semester, students shall make available their completed portfolio. It should contain not only the elements from 1.7.A and 1.7.B, but also the following types of items:

- A clear structure to allow a viewer to navigate the website accessing different areas depending on their interest
- Evidence of the engineering design process in action (this might be use of decision-making tools, photographs of prototypes, sketches, projects from Praxis I, CIV102, outside of school, etc., but should show emphasis on work done in Praxis II)
- Lecture extension(s) or research explorations into aspects of design
- Reflection on the effectiveness of your engineering design work, including ways in which you might change next time (presumably those will be captured in your design process)
- Next steps for development as an engineering designer

## 2. 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
2017-01-09	01	Meeting the team, developing stakeholders and requirements for good communities & opportunities + how to identify, track, and contact people
2017-01-16	02	
2017-01-23	03	
2017-01-30	04	
2017-02-06	05	Design Brief Fishbowl
2017-02-13	06	RFP Writing Studio
2017-02-20		<i>No Studios this week as it is Reading Week</i>
2017-02-27	07	Introduction to Solution Phase; RFP Reframing
2017-03-06	08	Concept Generation, rapid iteration
2017-03-13	09	
2017-03-20	10	<b>Design Beta Release</b>
2017-03-27	11	
2017-04-03	12	
2017-04-10	13	<i>No formal Studio activities this week to provide time to prepare for Showcase</i>

## Revision History

### 1.0 → 1.1

**(released 2017-02-25)**

- Corrected error in Studio Schedule Dates

### 1.1 → 1.2

**(released 2017-03-30)**

- Added the requirement to submit a PDF copy of the poster to the pre-Showcase submission to allow the Showcase Assessors to review it prior to the Showcase and to create a “pool” of Posters for classroom use in future years.
- Corrected the pre-Showcase submission date to be a proper year
- Changed the pre-Showcase submission time to 1200 from 1000 because of the 0900-1100 Monday midterm time and the empty time slot from 1100-1200 on Mondays