### 21W.732 Processes Summary

#### Writing, Graphics, and Oral Presentations

**Sources:** Dave's ranting

**Overview:**
- The production of successful communication requires a process that is iterative, recursive, non-linear, and fractal.
- The challenge is 2-fold: author/reader mismatch and convention juggling.
- Successful communication requires both time and a time/effort integral.
- The process deserves PREP or other forms of collaboration.

**Details:**
The process elements that must be iterated in a non-linear, fractal manner:
- Procrastinate
- Brainstorm
- Organize
- Research
- Start writing
- Edit
- Finish

**Level I questions:**
- Who wrote the document?
- Who was the intended audience?
- What is the content?

**Level II questions:**
- Why was the document written?
- What type of document is this?
- What are the assumptions of the document?

**Level III questions:**
- Can I believe this document?
- What can I learn about society from this document?
- What does this document mean to me?

#### Reading

**Source:** Kishlansky & Dave's ranting

**Overview:**
- Reading is a process that is iterative, recursive, non-linear, and fractal.
- The reading process connects texts, ideas, society, authors, readers, and the physical world. The connections are notoriously non-linear, fractal, and tangled.
- For the purposes of 21W.732, the reading focuses on the situation of engineers in the grand scheme of things and the acquisition of information required for the design process.
- Successful reading requires both time and a time/effort integral.

**Details:**
To claim you have read a document implies that you have answered these 9 questions:
- Level I questions:
  - Who wrote the document?
  - Who was the intended audience?
  - What is the content?
- Level II questions:
  - Why was the document written?
  - What type of document is this?
  - What are the assumptions of the document?
- Level III questions:
  - Can I believe this document?
  - What can I learn about society from this document?
  - What does this document mean to me?

#### Meetings

**Source:** Dave's ranting

**Overview:**
- For time scales >> than meeting duration, meetings are discrete events in time; thus, at a large scale, the meeting process is linear:
  1. Agenda
  2. Preparation
  3. Meeting
  4. Minutes
- Successful meetings require both time and time/effort integral.

**Details:**
Hints for each process step:
- Agenda: Each item deserves a time estimate, and categorization along the lines of information, discussion, decision, and action.
- Preparation: Do what you need to do to ensure the success of the meeting.
- Meeting: three stool legs: attend, participate, and permit/coerce others to participate.
- Minutes: Document accomplishments, decisions, and action items.

#### PREP

**Source:** Marc's journal article

**Overview:**
- Collaboration is a synergistic combination of individual contributions.
- Collaboration is a process that is iterative, recursive, non-linear, and fractal.
- Successful collaboration requires both time and a time/effort integral.

**Details:**
Process steps for collaboration:
- Individual contribution of thought and/or action
- Individual recognition of other team members' contributions
- Individual response to team members' contributions
- Synthesis of team outcomes from the individual contributions.

#### FRDPARRCD/Deterministic Design

**Source:** [http://web.mit.edu/sp.784/www/DOCUMENTS/Process%20of%20Design%20(Slocum,%20MIT).pdf](http://web.mit.edu/sp.784/www/DOCUMENTS/Process%20of%20Design%20(Slocum,%20MIT).pdf)

**Overview:**
- Design is a process that is iterative, recursive, non-linear, and fractal.
- The process is an organization of analysis that leads to design decisions.

**Details:**
Design steps:
- Functional Requirements
- Design Parameters
- Analysis
- Research
- Risks
- Countermeasures
- Design Decision (Pugh chart):
  - Compare concepts
  - Compare against vanilla concept
  - Weighting scheme depends on team and mission statement.