

Knowledge Building Evaluation

Your grade on knowledge building to date, as pursued through your participating in Knowledge Forum, will include: (1) your self-evaluation and (2) my evaluation of your participation in the group's efforts and progress with idea improvement and knowledge building.

To Hand In: Self-Evaluation

Below are the guiding principles for participating in knowledge building. Write a concise reflection (critical and thoughtful analysis) that includes:

- Your assessment of the progress made by the group in knowledge building and idea improvement.
- Your assessment of your own participation in the discourse that references the guiding principles and includes examples of your Knowledge Forum posts.
- What you have learned about participating in such a discourse, what you will do differently during the rest of the semester, and suggestions for structuring the group's participation in KF over the rest of the semester.

Knowledge Building—Guiding Principles

Principle One: Pushing at the Knowledge Edge

- Identify holes and inconsistencies in (your own and) the group's knowledge, and ask productive questions.
- Pose problems that extend the edge of the understanding of the community.
- Pose problems with potential for continual discussion and inquiry.

Principle Two: Progressive problem solving

- Show sustained inquiry: Identify problems, suggest solutions and keep asking questions.
- Pose notes that address the original problems and questions arising from them.
- Show continual efforts to grapple with problems posed by classmates.
- Reinvest efforts to keep solving new problems and improving ideas.

Principle Three: Collaborative effort

- Use various Knowledge Forum functions such as references, 'problem' identification at top of each note, keywords at bottom of each note, and summaries (including rise-aboves) to make knowledge accessible.
- Summarize different ideas and viewpoints and put them together as a better theory.
- Help classmates to extend and improve their understanding.
- Encourage each other to write notes that follow the other principles.

Principle Four: Monitoring your own understanding

- Recognize discrepancies, misconceptions and new insights; trace your own paths of understanding
- Explain what you did not know and what you have learned.
- Show your new ways of looking at questions, ideas, and issues after examining other Knowledge Forum notes.

Principle Five: Constructive uses of authoritative sources

- Use information from different sources (e.g., Internet, newspapers) to support, explain, and refute ideas.
- Bring together classroom learning, information from different sources and Knowledge Forum notes.
- Provide contrasting or conflicting information to what is presented in the class readings, newspapers and/or critique information as presented.

Load Duration Curve and Demand Side Programs

Summary

Using customer load data that is available on-line

- Download demand data for at least one month
- Construct the load duration curve, LDC
- Analyze the impact of **two** demand side programs, proposed by you
- Comment on your results

Details

- a) Download historical demand data for at least one month from <http://www.isone.org/markets/index.html>
 - a. A Matlab script is linked on the webpage, that may or may not work – use at your own discretion
 - b. Note you can get data of different time resolution (hourly or 5-minute)
- b) Construct the load duration curve, LDC, for your data
 - a. Label the LDC with data source, dates graphed, axes, units, etc – all the normal information to include on a well-labeled graph
- c) Analyze the impact of **two** demand side programs, proposed by you
 - a. Looking at the report from LBNL posted on the web page (Table 2-2 shown in class may be useful), or any other source you like, read and think about two different demand side programs
 - i. one that emphasizes long term system efficiency improvement
 - ii. one that emphasizes shorter term system operations needs
 - b. Using the load data you have downloaded, the chronological time-series data and the LDC you have constructed, **design and propose** the two demand-side programs as listed above.
 - i. For which times (specific hours each day perhaps **or** triggered by a certain load level) would you plan to implement your programs?
 - ii. How much demand reduction and/or load-shifting can you reasonably expect to achieve with your programs? Propose a percentage or MW value perhaps, and provide some supporting evidence or documentation for your expectation.
 - iii. Use names for your programs that already exist, or give them your own, descriptive names
- d) Graph the anticipated impacts of your proposed programs on your LDC – one separate graph for each program (making 3 graphs total)
- e) Comment on the information that is communicated by the LDCs.
 - a. The original LDC
 - b. The LDC with the system efficiency program
 - c. The LDC with the helping-short-term-operations program

Hand in

- 1) Feel free to work on this in teams and share ideas on KF
- 2) The three well-labeled LDCs
- 3) Text stating where you obtained your data, the programs you propose, your expectations, and the results as demonstrated by your LDCs.