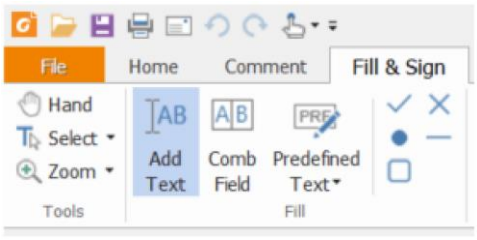
PCS 301 - PCS & Process Health Assessment in ATTD/ATM

Homework 4

Name	
Employee ID	
Date	
Department	

Instructions:

1. Please use the space provided to write down all the answers and pasting JMP screenshots. Use “Fill and Sign < Add text” in Acrobat Reader to add text to the fields. You can directly paste images in the space provided (after unselecting the Add Text) and then adjust the size to fit the space.



2. If there is a need for re-analysis (typically done due to exclusion of outliers), please use the Extra Space Section found in the last page of this document to include the initial outputs.

3. Save the file as .pdf (PDF format) and send out via email to the instructor.

4. The email should be titled [subject] “ PCS 301 – Homework 4”. Copy and paste this title to avoid any typos.

5. Feedback will be provided as comments in the pdf itself and will be asked to resubmit with corrections (if required).

6. Please DO NOT send the homework in any other format else your homework will NOT be graded and sent back.

Homework#4a:

Consider the tool matching analysis of EpoxyDwell.jmp. The TTD and S chart centerline values were found to be invalid.

Your task is to set appropriate control limits for this process using TTD methods.

- Epoxy Dwell
  - Response: Epoxy Dwell Time
  - Current Online Limits:

Chart Type	Center line	TTD	LCL	UCL	Method
Means	5500	130	5340	5660	Engineering with TTD
Std Dev	120	10	N/A	160	Engineering with TTD

  - Spec Limits:

LSL	Target	USL
5050	5500	5950

Dataset: Epoxy Dwell.jmp

Location: JMP SOS → Sample Data Set Index → PCS 301 Datasets → Homework

Setting Control Limits using TTD Methods

For the $\bar{X}$ Chart:

Paste your $\bar{X}$ Chart here:

- What TTD would you propose for the $\bar{X}$ Chart:

- What control limits would you propose for the $\bar{X}$ Chart:

- Compare the Online TTD Ratio to the proposed TTD Ratio

- Compare the Online CLSR to the proposed CLSR

- Compare the Online %OOC to the proposed %OOC

For the S Chart:

Paste your S Chart here:

- What Centerline would you propose for the S Chart?

- What TTD would you propose for the S Chart?

- What UCL would you propose for the S Chart?

- Compare the online OCI to the proposed OCI

- Compare the online TTD Ratio to the proposed TTD Ratio

- Compare the online CLSR to the proposed CLSR

- Compare the online %OOC to the proposed %OOC

Homework#4b:

Your task is to perform the BKM tool matching analysis on the data Epoxy Dwell Time.

- Epoxy Dwell
  - Response: Epoxy Dwell Time
  - Matching Method: Ref Tool with TTD
  - Ref Tool: E EYMB 03
  - Use centerlines and TTD values from Homework 4a.

  Dataset: Epoxy Dwell.jmp

  Location: JMP SOS → Sample Data Set Index → PCS 301 Datasets → Homework

Tool Matching Analysis:

For the $\overline{X}$ Chart:

Paste your Tool Matching Analysis for the Means here:

- How many tools were flagged for TMM?

- How many tools were flagged for TMS?

- What is the TTD Ratio?

- Conclusion/Recommendation

For the S Chart:

Paste your Tool Matching Analysis for Standard Deviation here:

- How many tools were flagged for TMM?

- How many tools were flagged for TMS?

- What is the TTD Ratio?

- Conclusion/Recommendation

Extra space for additional information (if needed):