

MATHMET Activity MU Training

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Sharing good practices

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- The courses are not unique but they benefit from ...
 - ... the direct (and privileged) involvement of the teachers in the work to maintain, update and promote the GUM suite of documents
 - ... the experience of the teachers gained from working directly with practitioners who want to apply the GUM documents in diverse applications
 - ... the experience and support of NPL Training (presented later): *what follows is my own view*
- Some lessons learned ...
 - *Use plenty of examples (theory is not enough)*
 - Both short examples to illustrate specific ideas and long examples to illustrate the process as a whole are useful
 - *Teach enough statistics (to help with the understanding) but not too much (to cause confusion)*
 - The topic of probability distributions is important but a derivation of the Welch-Satterthwaite formula is probably not
 - Not everything needs to be “proved” but a “numerical demonstration” is often sufficient, e.g., of the central limit theorem

- Some lessons learned continued ...
 - *Introduce enough notation (to make things clear) but not too much (to obscure ideas)*
 - We use X for a quantity and the random variable used to model it, x for an estimate of X , ξ for an arbitrary value of X and the argument of $g_X(\xi)$, x_i for an observation in a Type A evaluation, ...
 - *Don't just focus on the GUM approach*
 - Many students find the Monte Carlo approach more intuitive and easier than the GUM approach
- Aspirations ...
 - ... to make the course more hands-on and practical, which might have been possible for the in-person version of the course
 - ... to include a portfolio of examples that are adaptable to the interests and experiences of the students, which might be possible for the on-line version of the course



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