Hands-on Statistics Workshops for CUHK Postgraduates

A collaboration between the Department of Statistics and Data Science, the Centre for Learning Enhancement And Research (CLEAR), and Graduate School of The Chinese University of Hong Kong

Background

Welcome to the training programme for facilitators of Hands-on Statistics Workshops for CUHK Postgraduates, a series of workshops adopted into CUHK's Improving Postgraduate Learning (IPL) programme since 2025-26.

These workshops are the outcome of two TDLEG projects:

- Supporting Statistics Research Postgraduates to Teach Quantitative Data Analysis to Postgraduate Students Without a Statistics Background – Phase I
- Supporting Statistics Research Postgraduates to Teach Quantitative Data Analysis to Postgraduate Students Without a Statistics Background – Phase II

funded by the Teaching Development and Language Enhancement Grants (TDLEG) for the 2019-22 and 2022-25 Triennia respectively. The project's (called Stats4RPgs for short) fundamental idea was to engage Statistics research postgraduate students (RPgs) in teaching useful statistical topics to CUHK RPgs of all backgrounds, who need statistics for their own research. Before conducting the workshops, the Statistics RPgs undergo training.

After Stats4RPgs completion and successful results, Graduate School agreed to offer some Stats4RPgs workshops as part of the IPL programme, starting in 2025-26. These workshops are funded jointly by the Department of Statistics and Data Science and the Graduate School.

The administration and training of the Hands-on Workshops will be handled by two Coordinators:

- From the Department of Statistics and Data Science, Dr. J.A. Wright, who is responsioble selecting Statistics RPgs, their training and quality of teaching materials.
- From CLEAR, Dr. K.C. Wong, who is responsible for logistical arrangements, KEEP page maintenance and promotion.

If you have any questions or concerns, please contact Dr. John Wright at jawright@cuhk.edu.hk or Dr. Wong Kin Chi at kc.wong@cuhk.edu.hk.

Overview of the Training Programme for Department of Statistics and Data Science Research Postgraduates

This document provides the guidelines and structure of our project's training programme which, should you complete it, will

- Teach you what challenges students may have when learning statistics, what they want from workshops and how to design your workshop;
- Involve you recording pre-workshop videos and writing workshop materials;
- Conducting your workshop in face-to-face mode to CUHK postgraduates without a statistics background;
- Take about 25 hours of your time, for which you will receive a remuneration of $5000;

Training Programmme Details

Here are the steps for completing the training programme. The training programme is expected to take around 25 hours to complete.

1. **Complete the pre-training questionnaire (0.5 hour):** Please complete the pre-training questionnaire, which asks for your views and understanding of teaching students without a statistics background. Submit your completed questionnaire to Dr. Wright.

2. **Watch the training videos and related materials (2 hours):** We have developed a series of 9 micro-modules that address the difficulties and anxiety in learning statistics for non-statistics background students, their learning needs, suggestions on planning workshops and suitable instructional techniques.

   Furthermore, you will also watch a summary of reflections from previous Stat RPgs who gave workshops, which can help you learn from others' experiences. You can access the micro-modules anytime on YouTube (see the links on our project's homepage: https://www.sta.cuhk.edu.hk/jawright/Stats4RPgs/).

   Pause the end of each video to see some key takeaways and "food for thought" questions – do spend time answering these.

   We've also compiled a list of references cited in the videos for those interested in further reading. This list is available at the end of the document.

3. **(Optional) Class Observations and Being a Teaching Assistant in an Elementary/Advanced SPSS Workshop:** Our past experience with Statistics RPgs has shown that observation and interaction are key to assisting students without a background in statistics. We invite you to join us as a Teaching Assistant in an IPL workshop titled "Elementary Data Analysis for Quantitative Research by SPSS." This workshop, organized by CLEAR and the Graduate School, taught by

Prof. Yau. During the workshop, you'll have the opportunity to observe potential students and Prof. Yau's teaching methods, as well as provide in-person technical support to students. Alternatively, we also encourage you to attend another IPL workshop, "Advanced Data Analysis for Quantitative Research by SPSS," also taught by Prof. Yau. We will share the dates of these workshops with you.

4. **Develop your workshop with the guided teaching plan (3 hours):** After watching the micro-modules and observing your potential students, you will better understand the difficulties and learning needs of research postgraduates without a background in statistics, as well as effective teaching strategies.

   Your next task is to complete a teaching plan using the step-by-step guide provided (see the document "Teaching Plan for Workshop" available on https://www.sta.cuhk.edu.hk/jawright/Stats4RPgs/). You should discuss with Dr. Wright what your topic will be – see the list of possible topics overleaf. You may review your predecessors workshop plan and materials to help you develop your own.

5. **Meet with Dr. Wright for feedback on the teaching plan (2 hour):** The objective of the meeting is to discuss your teaching plan and receive feedback and guidance to improve it together with Dr. Wright.

6. **Prepare pre-workshop videos and learning materials (5 hours):** Following the meeting, your next step is to prepare pre-workshop videos and presentation slides that include examples and hands-on exercises using statistical software. These materials should align with the revised teaching plan and reinforce the content covered in the training videos. If you need technical assistance in video production, such as borrowing equipment (e.g. professional microphone), please do not hesitate to contact Dr. Wright.

7. **Second meeting with Dr. Wright and refining teaching materials (6 hours):** After tailoring the learning materials, please send them to Dr. Wright and schedule a follow-up meeting. During this meeting, Dr. Wright will provide detailed feedback and suggestions to help you refine your materials. If there is time, you give a rehearsal workshop. Once your materials are finalised, please upload the pre-workshop videos, presentation slides, and data to the KEEP course platform. CLEAR will then organise and promote the workshops.

8. **Conduct in-person workshops (6 hours):** you will give two 3-hour workshops, the second a repeat.

9. **Complete the post-training questionnaire (0.5 hours):** You will receive a summary of the student evaluations of the workshop one week after. Please complete the post-training questionnaire to evaluate your experience and the effectiveness of the training programme. Your feedback will help us review and

improve. In the future, you may be invited to share your experience with your successors in the next round of the training programme.

List of possible workshop topics as of 2025-26

- Linear Regression with SPSS
- Analysis of Variance with SPSS
- Factor Analysis and Structural Equation Modelling with SPSS

This list may change (adding or removing topics) over time.

List of suggested references

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