**DiffraLab Diffraction Simulation Course Likert Scale Questionnaire**

Date：\_\_\_\_\_\_\_(yy)/\_\_\_\_\_(mm)/\_\_\_\_\_\_(dd)

Please indicate the extent to which you agree with each of the following statements, based on your actual experience in the DiffraLab diffraction simulation course.

**【A. Understanding of the course content】**

1️. I can clearly articulate Bragg's law and how it is applied in interpreting diffraction patterns.

☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree

2️. I understand the effect of wavelength uncertainty on the width of diffraction peaks.

☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree

3. I understand how the number of simulated particles affects the quality of the diffraction pattern.

☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree

4. I can explain the distinctions between neutron and X-ray diffraction and describe the contexts in which each is applied.

☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree

**【B. Ability to perform and analyze simulations】**

5. I feel confident using BraggIt independently to simulate powder diffraction patterns.

☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree

6. I am able to use ResoFox to observe how instrument parameters (such as Bragg angle and mosaic spread) affect diffraction patterns.

☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree

7. I am able to perform diffraction peak fitting using Excel or G-Fitter based on simulation results and calculate the full width at half maximum (FWHM).

☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree

**【C. Critical thinking and experimental mindset】**

8. I can explain why increasing the experimental time does not necessarily lead to unlimited improvement in resolution.

☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree

9. I am able to critically compare the differences and limitations among experiment, theory, and simulation.

☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree

10. I am able to apply the knowledge gained from this course to future research and projects.

☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree

**【D. Learning Attitude and Course Experience】**

11. I am interested in the simulation tools (DiffraLab) used in the course.

☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree

12. This course has increased my interest in experimental physics and diffraction analysis.。

☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree

13. I believe simulation-based courses are more effective than traditional courses in helping me understand complex concepts.。

☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree

14. I am satisfied with the course structure (theory explanation → simulation practice → data analysis).

☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree

15. I would recommend this course to other students.

☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree