

Graduate Institute of Science Education

● Degree Offered

Bachelor Programs Master's Programs Doctoral Programs

● Introduction

The Graduate Institute of Science Education (GISE) was officially inaugurated in 1986. It is the first institute of its kind and dedicated to research in the area of science education in Taiwan. The Institute provides a doctoral and two masters programs. It aims at training graduate students to become independent and rigorous researchers, preparing them to become well-equipped science teachers, and enabling them to become science educators with interdisciplinary perspectives. These aims are achieved by means of organizing advanced courses, overseeing students' research projects and by involving them to participate in research projects conducted by the faculty.

● Research Fields

Over the years, the faculty of the Institute has conducted many research projects in relation, but not limited, to the following areas:

1. Nature of science and philosophy of science
2. Science and mathematics teacher education
3. Concepts development, problem solving, knowledge acquisition, misconception and concept change in science and mathematics
4. Sociology of science education
5. Theory of textual analysis on science textbooks
6. Educational technology and e-learning in science and mathematics education
7. Large-scale as well as classroom assessment in science and mathematics
8. Creativity in science and creativity in science teaching

● Graduation Requirements

Course duration(per semester) :

Master: 2-4 years (4-8 semesters)

Ph.D. : 3-7years (6-14 semesters)

The requirements for graduation :

Master 32 credits

Ph.D. 28 credits

Core courses :

Philosophy and History of Science

Philosophy of Science, History of Science, Nature of Science, Sociology of Knowledge and Science Education.

Psychology and Science Learning

Psychological Foundations in Science Education, Social Psychology and Science Learning, Psychology of Science Learning / Mathematics Learning, Studies in Science / Mathematics Problem Solving, Introduction to Mathematics Education, Thinking and Process: Natural Science.

Science Instruction and Curriculum

Teaching Models in Science Instruction, Development and Design of Science Curriculum, Peer Interactions and Science Learning Environment, Science Texts Analysis, Mathematics Curriculum, Measurement & Evaluation in Science / Mathematics Instruction, Introduction to Educational Technology in Science Education, Theory and Research of Learning Technological Tools in Science Education.

Assessment

Science / Mathematics Assessment of Student's Learning Outcome.

Statistics and Research

Qualitative Research, Test Theory, Elementary Statistics, Data Analysis, Methodology of Science Education Research, Special Topics on Research in Methodology: Verbal Data Analysis for Science Learning and Problem Solving.

● Languages of Instruction

English Chinese Other:

● Other information

The Institute encourages all its graduate students to acquire a broader scope in science education and build up fundamental understanding in such areas as the philosophy of science education, cognitive psychology, sociology of science (education), curriculum design, teaching models, educational technology, and research methodology in science education. It also encourages its students to take advantage of the full spectrum of scientific resources in the Institute and the College of Science while they are enrolled in our programs. Up to the present, a total of 45 doctoral students, 107 master students and 65 master students in teaching have graduated from our Institute.

Contact information

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