The goal of this specialism is to provide a strong foundation in the “Sciences of Learning” (SoL) for teachers. The SoL focus on the intersection of three aspects of education: (a) theories and evidence about how students learn; (b) educational contexts (e.g. classrooms, museums, tutoring centers); and (c) technologies (in a broad sense—computer-based technologies, but also curriculum materials, and simple materials). The “educational context” in Hong Kong always includes a teaching subject (e.g. Liberal Studies or Biology) and the various elements of 21st century learning promoted by recent curriculum reforms (e.g. learning how to learn, inquiry-based learning, project-based learning). Students will learn to think about learning in all three of these dimensions, and learn to design and evaluate learning environments.

Who would benefit from this specialism?
This specialism is designed for teachers who are interested in questions relating to how students learn and the design of environments that use research results to enhance learning. This is a relatively new specialism and will be offered for the second time. Based on our experience in the first year, the specialism will be of interest to teachers of a variety of subjects, including Science, Mathematics, Geography, Chinese, Liberal Studies, and General Studies, as well as lecturers in higher education and professionals in educational administration.

Mode of study:
To be available on part-time and full-time mode (for 2-year part-time study or 1-year full-time study)

Outline of four Specialist Modules:

Module 1: The sciences of learning
This module is foundational to the specialism. We will discuss the origins of the SoL, important research on learning (e.g. conceptual change, epistemic change, motivation), and major perspectives from the SoL, including problem-based learning, argumentation, project-based learning, collaborative learning, and knowledge building.

Module 2: Learning in the disciplines
This module examines learning in the disciplines (school subjects), especially Science, Mathematics, General Studies, and Liberal Studies. The module will be run as a seminar series, in which an expert from a discipline will help us to examine innovative learning
environments or research in that discipline. Some experts will be local; others will offer “webinars”. The “teacher” will help to ensure coherence between the subjects and liaise with guest lecturers. The selection of the topics will depend on the students enrolled in the specialism.

**Module 3: Fostering 21st century skills with knowledge building**

This module provides a thorough introduction to an educational approach that can be used to address many current requirements of the Hong Kong school curriculum, including learning to learn, inquiry-based learning, reading to learn, assessment for learning, and the use of ICT. We examine the theory as well as current classroom practice, drawing from local and international examples. The module will allow students to explore how to use ICT to support learning and to empower their own students to have more control over the learning process.

**Module 4: Learning and teaching with technology**

This module provides a comprehensive introduction to the use of IT for teaching and learning. Topics range from traditional applications e.g., computer-based tutorials to more contemporary applications such as the use of learning objects, cognitive tools and collaborative technologies. The module highlights theories of learning underpinning technology integration and the educational contexts within which these are to be used.

In addition to four specialist modules, students will also have to complete:

- a research methods course “Methods of Research and Enquiry” (2 modules equivalent); plus
- **either** an option of one elective module and a DISSERTATION (3 modules equivalent),
  or an option of three elective modules and a PROJECT by Independent Study (1 module equivalent).