

PGCE Secondary Science



Why Train with us?

This course offers the opportunity for students to develop their subject knowledge to a level at which they feel confident to teach the National Curriculum across all three sciences up to and including Key Stage 4. In particular the module seeks to develop an awareness of the role, and potential value, of current research in the area of science education in terms of informing teaching practice in the school science laboratory. Throughout the module a strong emphasis is placed on the role of practical work in the teaching of science and, in particular, on its effectiveness and affective value.

About this course

The Science module aims to allow trainees to extend existing subject knowledge, particularly addressing any areas for development in skills, knowledge and understanding; develop a clear understanding of the rationale and scope of this subject within the school curriculum at key stages 3 and 4; gain a comprehensive knowledge of the pedagogy of the subject and how to apply this within educational contexts; reflect critically on new initiatives and research into teaching and learning within the subject; and, allow trainees to explore a range of teaching skills and techniques as well as challenge their attitudes and assumptions.

This module links both to the Professional Studies and the School Placement modules in that trainees will be given the opportunity to explore how knowledge and understanding of education relates to the subject and applies to their school practice.

Special features of the course

The purpose of the PGCE Secondary Science course is to develop competence in teaching science in secondary schools, using a variety of methods and tools including ICT, so as to fulfil and exceed the QTS standards. Among other things, this involves:

- Preparing trainees for experiences in school placements.
- Helping trainees to become analytical, critical and reflective practitioners.
- Complementing the work undertaken in our partnership schools.
- Developing an awareness of support materials available for teaching science.
- Preparing teachers of science who possess the skills, knowledge and understanding necessary in order to meet the vocational and technological demands of 21st century society.

- Developing well-informed individuals who can confidently apply numerous theoretical principles in a variety of teaching situations.
- Extending and deepening knowledge of specialist subject matter.

In support of the acquisition of evidence for the QTS Standards, we aim to help our trainees to understand and implement the constructivist learning principle. The underpinning principle of this theory is that the learners are actively involved in the construction of their own ideas. This view has meant that learning and the role of the learner is considered as important as teaching and the role of the teacher.

Teaching and Assessment Methods

The module will be taught through a range of:

- seminar discussions
- lectures (including guest speakers)
- presentations/ practice teaching
- workshops
- practicals / performances
- field trips/visits
- tutorials
- directed tasks
- VLE inputs
- independent study
- school related experience/work with pupils

Key areas have been identified which are important in attaining high standards in science teaching (taken from the key stage 3 strategy):

- Lessons have clear objectives, are suitably paced and busy.
- A high proportion of lesson time is devoted to a combination of demonstration, illustration, instruction and dialogue, suited to the lesson's objectives.
- Regular oral and mental work develops and secures pupils' recall skills and mental strategies, and their visualisation, thinking and communication skills.
- There is whole-class discussion in which teachers question pupils effectively, give them time to think, expect them to demonstrate and explain their reasoning, and explore reasons for any wrong answers.
- Pupils are expected to use correct scientific terms and to talk about their insights rather than give single-word answers.
- Written activities consolidate the teaching and are supported by judicious use of information and communication technology (ICT), textbooks and other resources.
- Pupils are involved and their interest maintained through suitably demanding work that requires them to think for themselves.
- Teachers make explicit for pupils the links between different topics in science and between science and other subjects.
- Manageable differentiation is based on work common to all pupils in a class, with targeted support to help those who have difficulties to develop their science.

More information

For more information about the programme, course content or applications, please contact The Academic Registry on 01522 583658 or email info@bishopg.ac.uk