EP312-15 Introduction to Secondary Chemistry Teaching

20/21

Department
Centre for Teacher Education
Level
Undergraduate Level 3
Module leader
Holly Heshmati
Credit value
15
Module duration
10 weeks
Assessment
100% coursework
Study location
University of Warwick main campus, Coventry

Description

Introductory description

This module takes place in term 2 and is specially designed to introduce you to Science-Chemistry curriculum and pedagogy in the Secondary school age range. You will explore your subject from a new perspective through engaging sessions at university led by teaching fellows and visiting teachers. Practical workshops will examine the content of Secondary Science-Chemistry National Curriculum and how to address barriers to learning in Science- Chemistry through the development of effective teaching approaches and resources.

The module is hosted by the Centre for Teacher Education (currently rated 'Outstanding' by OFSTED). Anyone who completes the module is automatically eligible for an interview for the Postgraduate Certificate in Education (PGCE) initial teacher training course (providing all entry requirements for Initial Teacher Training are met).

Module web page

Module aims

1. To develop knowledge of Science- Chemistry teaching in the UK education system and some of the approaches to learning that support secondary students in the subject.

2. To develop knowledge and understanding of Science- Chemistry education and the secondary curriculum.
3. To develop key transferable skills through engagement with 11-18 education.
4. To develop skills in personal reflection on professional practice.
5. To relate educational theory to education practice.

Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

The theory which underpins the practice of Science- Chemistry teaching is explored through seminars led by CTE Teaching Fellows. The seminars begin by discussing the current context of the UK education system and national curriculum before exploring a range of key themes in education such as how students learn, how ideas develop in the school curriculum and using assessment for learning and specific aspects of pedagogy relating to the teaching of Science- Chemistry.

As part of the module you engage in Science- Chemistry education through developing materials, resources and teaching approaches to support learning in Science- Chemistry. You will develop your practical understanding of the teaching of Science- Chemistry . Indicative activities might include: developing learning resources, providing exemplar materials to a professional brief, producing online learning resources.
To prepare for and support you for this you will participate a series of workshops at the university. These are highly interactive, practice based sessions, delivered by visiting teachers from local secondary schools. Sessions cover topics such as pitching and sequencing resources to support learning, overcoming barriers to learning and effective questioning.

Learning outcomes

By the end of the module, students should be able to:

- LO1 Critically analyse and reflect on key issues in Science- Chemistry education in school.
- LO2 Critically reflect on practice in teaching Science- Chemistry in school.
- LO3 Apply learning theory to school Science- Chemistry teaching practices.
- LO4 Demonstrate professional skills in supporting learning in Science- Chemistry.

Indicative reading list

Student Guide to Literacy in Science
ASE guide to secondary science education
Exploring young people's views on science education
Successful science: strengths and weaknesses of school science teaching
Starting science ... again?: making progress in science learning
What successful science teachers do: 75 research-based strategies
Science formative assessment: 75 practical strategies for linking assessment, instruction, and learning

Teaching science: developing as a reflective secondary teacher
Good practice in science teaching: what research has to say
Teaching secondary science using ICT
How science works: exploring effective pedagogy and practice
Science learning, science teaching

Interdisciplinary

Through exploring the teaching and pedagogy of your subject you will consider and build connections between your subject, educational theory, the psychology of learning and cognition and also consider elements of policy, society and sociology. You will develop your written communication skills in producing both academic and professional evidence-informed rationales for practice.

Subject specific skills

You will develop skills relevant for teaching and the development of practice such as communication, peer and professional collaboration and reflection. You will also develop skills relevant to the academic study of education such as analysis and critique. The module will also develop your skills in the pedagogy of your subject.

Transferable skills

Critical Thinking
Reasoning and Problem Solving
Active Lifelong Learning
Communication (verbal and written)
Teamwork and working effectively with others
Information literacy (research skills)
ICT Literacy
Citizenship (local and global)
Ethical Values
Inter-cultural learning and diversity awareness
Professionalism
Organisational awareness

Study

Study time

Type	Required
Lectures	2 sessions of 1 hour (1%)
Seminars	7 sessions of 2 hours (9%)
Total	150 hours

Type	Required
Practical classes	7 sessions of 2 hours (9%)
Assessment	120 hours (80%)
Total	150 hours

Private study description

No private study requirements defined for this module.

Costs

No further costs have been identified for this module.

Assessment

You must pass all assessment components to pass the module.

Assessment group A

	Weighting	Study time
A critical review on an issue in Science- Chemistry Education	50%	60 hours
A short (1000 word, approximately 4 sources) annotated bibliography on a chosen issue in Chemistry Education followed by a 500 word discussion and conclusion on the implications for teaching Science- Chemistry .		
Poster	50%	60 hours
A poster presentation of a learning resource, artefact or materials designed to support children's learning in Science- Chemistry with a supporting rationale relating to , secondary chemistry curriculum, learning or pedagogic theory.		

Feedback on assessment

Formative: During the course of the module students will have the opportunity to submit one critical review entry.
Summative: A written feedback sheet and in-text comments will be provided on each component.

Availability

Courses

This module is Optional for:

- UCHA-4 Undergraduate Chemistry (with Intercalated Year) Variants
  - Year 4 of F101 Chemistry (with Intercalated Year)
  - Year 4 of F122 Chemistry with Medicinal Chemistry (with Intercalated Year)
- UCHA-3 Undergraduate Chemistry 3 Year Variants
  - Year 3 of F100 Chemistry
  - Year 3 of F121 Chemistry with Medicinal Chemistry
- Year 4 of UCHA-F107 Undergraduate Master of Chemistry (with Intercalated Year)
- UCHA-F109 Undergraduate Master of Chemistry (with International Placement)
  - Year 3 of F109 MChem Chemistry (with International Placement)
  - Year 3 of F111 MChem Chemistry with Medicinal Chemistry (with International Placement)
- UCHA-4M Undergraduate Master of Chemistry Variants
  - Year 3 of F105 Chemistry
  - Year 3 of F109 MChem Chemistry (with International Placement)
  - Year 3 of F125 MChem Chemistry with Medicinal Chemistry
- Year 4 of UCHA-F127 Undergraduate Master of Chemistry with Medicinal Chemistry(with Intercalated Year)