

EP307-30 Introduction to Secondary Chemistry Education

24/25

Department

Centre for Teacher Education

Level

Undergraduate Level 3

Module leader

Holly Heshmati

Credit value

30

Module duration

10 weeks

Assessment

100% coursework

Study locations

University of Warwick main campus, Coventry Primary

A Warwick Partnership School

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 and have opportunity to support teaching and learning in practice through activities in a school or online learning setting with secondary age pupils. Through engagement in Science-Chemistry education you will have the opportunity to raise awareness of and encourage engagement with Science-Chemistry education within the local community.

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 and understanding about the UK education system and what it is like to be a secondary Science-Chemistry teacher.
2. To develop knowledge and understanding of Science-Chemistry education.
3. To provide a professional experience in supporting the teaching of Science-Chemistry.
4. To develop key transferable skills through engagement with 11-18 education.
5. To develop skills in personal reflection on professional practice.
6. To relate educational theory to education practice.
7. To raise aspirations of school students and encourage access to the study of Science-Chemistry in Higher Education.

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 contributing to support for secondary age Science-Chemistry students, either through online learning support or a short placement in a school. Whilst engaged in supporting Science-Chemistry learning you will develop your practical understanding of the teaching of Science-Chemistry. Indicative activities might include: developing learning resources, observing experienced teacher, supporting lessons, 1 to 1 or small group teaching, supporting school students in preparation for Higher Education. 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 effective management of learning environments, developing resources to support 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 engagement with supporting the teaching and learning of Science-Chemistry.
- LO5 Demonstrate professional skills in collaboration and effective communication with young people.
- LO6 Demonstrate engagement with raising the aspirations of school students towards study in Higher Education

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, 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 (5%)
Practical classes	7 sessions of 2 hours (5%)
Placement	52 hours 30 minutes (17%)
Private study	22 hours 30 minutes (7%)
Assessment	195 hours (65%)
Total	300 hours

Private study description

planning & creating learning resources

Costs

Category	Description	Funded by	Cost to student
Other	In the UK, anyone working with children is required to have a Disclosure & Barring Services (DBS) check. The Centre for Teacher Education will cover the costs of this, however, you will need to provide the relevant proof of identification and address prior to the start of the module.	Department	£0.00
Field trips, placements and study abroad	The module may provide the option for a short physical placement in a local school. You will be responsible for your travel arrangements to the placement. Placements are assigned to align with bus routes and opportunities for car share where possible. When possible, you will have the option to choose an alternative online teaching experience which will provide access to similar experiences and learning outcomes with no travel requirements.	Student	

Assessment

You must pass all assessment components to pass the module.

Assessment group A1

	Weighting	Study time
Critical review on an issue in Science-Chemistry Education	35%	60 hours
A short planning and reflection piece (500 words) on a chosen issue in Science-Chemistry Education followed by a group video presentation discussing the issue and implications for teaching Science-Chemistry.		
Evidence-based Science-Chemistry teaching presentation	35%	75 hours
A recorded teaching presentation designed to support children's learning in Science-Chemistry with a 500-word teacher note, discussing the rationale relating to secondary Science-Chemistry curriculum, learning intentions or pedagogic theory.		
Academic Poster- what should future of science-chemistry education look like?	30%	60 hours
An academic poster to synthesise ideas from the module learning and demonstrate their application by exploring what future of science-chemistry education should look like. This draws together concepts students will have developed at school/tutoring, as well as those they have encountered at the university through critical engagement with both theory and practice.		

Feedback on assessment

Formative: During the course of the module students will have the opportunity to submit one annotated bibliography and their planning sheet for the academic poster for either written or audio feedback.

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 Intercolated Year) Variants
 - Year 4 of F101 Chemistry (with Intercolated Year)
 - Year 4 of F121 Chemistry with Medicinal Chemistry
- 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 Intercolated 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)