

## Course Specification

<b>Published Date:</b>	14-Sep-2020
<b>Produced By:</b>	Laura Clode
<b>Status:</b>	Validated

## Core Information

<b>Awarding Body / Institution:</b>	University of Wolverhampton		
<b>School / Institute:</b>	Wolverhampton School of Sciences		
<b>Course Code(s):</b>	CH003S01UV CH003S31UV	Full-time Part-time	2 Years 4 Years
<b>Course Title:</b>	HND Chemistry		
<b>Hierarchy of Awards:</b>	Higher National Diploma Chemistry awarded by the University of Wolverhampton Certificate of Higher Education Chemistry awarded by the University of Wolverhampton University Statement of Credit University Statement of Credit		
<b>Language of Study:</b>	English		
<b>Date of DAG approval:</b>	19/May/2017		
<b>Last Review:</b>	2017/8		
<b>Course Specification valid from:</b>	2013/4		
<b>Course Specification valid to:</b>	2023/4		

## Academic Staff

<b>Course Leader:</b>	Dr Catherine Duke
<b>Head of Department:</b>	Georgina Manning

# Course Information

---

Location of Delivery:	University of Wolverhampton
Category of Partnership:	Not delivered in partnership
Teaching Institution:	University of Wolverhampton
Open / Closed Course:	This course is open to all suitably qualified candidates.

---

## Entry Requirements:

---

Entry requirements are subject to regular review. The entry requirements applicable to a particular academic year will be published on the University website (and externally as appropriate e.g. UCAS)

### 2017 Entry

- A-level minimum of C or EE to include Chemistry.
- BTEC Level 3 Extended Diploma in Applied Science grade PPP or BTEC National Diploma grade PP.
- If you've got other qualifications or relevant experience, please contact [The Gateway](#) for further advice before applying.
- International entry requirements and application guidance can be found [here](#)

### Other requirements

An offer of a place will not be made until you have attended a formal interview.

Those who do not meet the entry requirements may be offered an alternative course

### Distinctive Features of the Course:

---

The substantial practical element of this course will be based in the brand new £25m state of the art Science Laboratory Building. Much of the equipment required will also be new. The cohort size will be reasonably small (25-50 students), at least in the early years of the course, facilitating more personal attention, per student, from the cadre of experienced chemistry staff.

Our staff complement boasts two experienced research professors; a significant number for a relatively small department. The academic development plan outlines how further chemistry staff (REF-able) shall be employed as the course grows over the first three years of operations. This, together with the industrial input into the design of the course, ensures that the programme contains current, relevant cutting edge research topics to underpin the course.

The course has been designed with both the QAA subject benchmark statements in Chemistry and the RSC accreditation criteria in mind. A group of industrial "stakeholders" has also been consulted to provide advice on relevance to local chemical industry. As mentioned in section 5 of this document, we are currently working with the RSC to achieve accreditation of the new BSc chemistry degree. This will be an on-going process over the first two years of the course, starting in September 2014, and shall mean that our first cohort of BSc graduates in July 2017 shall be eligible for associate membership of the RSC. Any successful HND student who wishes to transfer to the BSc course should therefore also satisfy RSC accreditation criteria upon completion of the subsequent BSc course.

### Educational Aims of the Course:

---

The Chemistry HND aims to:

Develop your skills and knowledge in the main areas of chemistry (organic, inorganic, physical and analytical chemistry) in an integrated manner with areas of specialism such as pharmaceutical chemistry, forensic chemistry, biochemistry, polymer chemistry, environmental chemistry and aspects of industrial chemistry.

Produce a diplomate who is "fit for purpose", and who is ready for employment in the chemistry or related industry, at a technical level, or who can progress to further third year study at either BSc or MChem level.

The Chemistry HNC aims to:

Provide the student with a good grounding in theoretical and practical aspects of the main areas of chemistry (organic, inorganic, physical and analytical chemistry) with an opportunity to explore selected specialist areas such as polymer chemistry, environmental chemistry, aspects of industrial chemistry etc.

Produce a competent chemist capable of applying their knowledge at a technical level, or who can progress to higher level study (HND/BSc) in the field of chemistry.

Intakes:

---

September

Major Source of Funding:

---

Office for Students (OFS)

Tuition Fees:

---

Tuition fees are reviewed on an annual basis. The fees applicable to a particular academic year will be published on the University website.

Year	Status	Mode	Amount
2020/1	HEU	Full Time	£
2020/1	Overseas	Full Time	£
2020/1	Home / EU	Full Time	£
2020/1	Home / EU	Part Time / Full Time	£
2020/1	H	Part Time	£3050.00
2020/1	Overseas	Part Time	£6125.00

PSRB:

---

None

Course Structure:

---

## September (Full-time)

Part time students study alongside full time students. However, they do not study more than 80 credits in each academic calendar year.

Year 1

Module	Title	Credits	Period	Type
4CH001	Concepts in Inorganic Chemistry	20	SEM1	Core
4CH002	Principles of Physical Chemistry	20	SEM2	Core
4CH003	Fundamentals of Organic Chemistry	20	SEM1	Core
4CH004	Introduction to Analytical Chemistry	20	SEM2	Core

**Linked Option Group Rule:** Select a minimum of 40 credits and a maximum of 40 credits from the linked (\*) groups.

**\* For this option group you must choose a minimum of 0 credits and a maximum of 40 credits**

Full Time students must select 4CH008 and 4MA007.

Part Time students employed in relevant industry should select 4CH006 and 4CH007.

4CH006	Skills for Chemistry	20	SEM1
4CH007	Work-based learning and development 1	20	SEM1

**\* For this option group you must choose a minimum of 0 credits and a maximum of 40 credits**

Full Time students must select 4CH008 and 4MA007.

Part Time students employed in relevant industry should select 4CH006 and 4CH007.

4CH008	Skills for Chemistry (Year long)	20	YEAR
--------	----------------------------------	----	------

**\* For this option group you must choose a minimum of 0 credits and a maximum of 20 credits**

4MA007	Engineering Mathematics	20	YEAR
--------	-------------------------	----	------

## September (Full-time)

Part time students study alongside full time students. However, they do not study more than 80 credits in each academic calendar year.

## Year 2

Module	Title	Credits	Period	Type
5CH003	Physical Chemistry	20	SEM1	Core
5CH004	Inorganic Chemistry	20	SEM1	Core
5CH001	Chemical Analysis	20	SEM2	Core
5CH002	Organic Chemistry (Structure and Mechanism)	20	SEM2	Core
5CH008	Integrated Chemistry 2 (Organic and Analytical)	20	SEM2	Core

**For this option group you must choose a minimum of 20 credits and a maximum of 20 credits**

5CH009	Integrated Chemistry 1	20	SEM1	
5AB011	Independent Study	20	SEM1	

**For this option group you must choose a minimum of 0 credits and a maximum of 20 credits**

5CH007	Work-based Learning and Development 2	20	SEM2	
--------	---------------------------------------	----	------	--

Please note: Optional modules might not run every year, the course team will decide on an annual basis which options will be running, based on student demand and academic factors, to create the best learning experience.

## Learning, Teaching and Assessment

### Academic Regulations Exemption:

1.2.5. - Exemption from academic regulations for differentiation between awards permitting HNC and HND courses to run identical module diets as the first two years (Level 4 and Level 5) of the BSc (Hons) Chemistry programme.

APPROVED by AFRSC (18/7/2014).

### Reference Points:

UK Quality Code for Higher Education <https://www.qaa.ac.uk/quality-code>

UK Quality Code for Higher Education Advice & Guidance <https://www.qaa.ac.uk/en/quality-code/advice-and-guidance>

Subject Benchmark Statements <https://www.qaa.ac.uk/en/quality-code/subject-benchmark-statements>

Qualifications and Credit Frameworks <https://www.qaa.ac.uk/en/quality-code/qualifications-and-credit-frameworks>

### Learning Outcomes:

HNC Course Learning Outcome 1 (HNCCLO1)

Show knowledge and understanding of fundamental concepts of organic, inorganic, physical and analytical chemistry.

---

HNC Course Learning Outcome 2 (HNCCLO2)

Demonstrate practical skills (including safe working practice) and ability to make and record experimental observations and report results.

---

HNC Course Learning Outcome 3 (HNCCLO3)

Demonstrate an awareness of the importance of chemical science to a selection of related disciplines, e.g. toxicology, forensic chemistry, polymer science, environmental chemistry, medical and industrial/manufacturing applications.

---

HNC Course Learning Outcome 4 (HNCCLO4)

Demonstrate the qualities and transferable skills necessary for professional development.

---

HND Course Learning Outcome 1 (HNDCL01)

Demonstrate practical skills, work safely in the laboratory and be fully conversant with standard chemical techniques, instrumentation and use of appropriate computer software

---

HND Course Learning Outcome 2 (HNDCL02)

Survey and review scientific information, communicate effectively both orally and in writing, apply numerical skills to scientific data, and work in teams and independently.

---

HND Course Learning Outcome 3 (HNDCL03)

Demonstrate a systematic understanding of physical chemistry and physicochemical principles and apply that knowledge to theoretical and practical problem solving.

---

HND Course Learning Outcome 4 (HNDCL04)

Demonstrate and apply knowledge of a range of inorganic and organic chemical materials (including structure, bonding, properties, synthesis, isolation, purification and characterisation techniques)

---

HND Course Learning Outcome 5 (HNDCL05)

Demonstrate and apply knowledge of a range of analytical techniques, evaluate and interpret analytical data (including appropriate statistical analysis)

---

HND Course Learning Outcome 6 (HNDCL06)

Demonstrate the qualities and transferable skills necessary for professional development requiring: an awareness of a range of issues within chemistry that overlap with other related disciplines

---

Overview of Assessment:

---

Module	Title	Course Learning Outcomes
4CH001	Concepts in Inorganic Chemistry	HNCCLO1, HNCCLO2
4CH002	Principles of Physical Chemistry	HNCCLO1, HNCCLO2
4CH003	Fundamentals of Organic Chemistry	HNCCLO1, HNCCLO2
4CH004	Introduction to Analytical Chemistry	HNCCLO1, HNCCLO2
4CH008	Skills for Chemistry (Year long)	HNCCLO2, HNCCLO3, HNCCLO4
4MA007	Engineering Mathematics	HNCCLO4
5AB011	Independent Study	HNDCL06
5CH001	Chemical Analysis	HNDCL01, HNDCL02, HNDCL05
5CH002	Organic Chemistry (Structure and Mechanism)	HNDCL01, HNDCL02, HNDCL04, HNDCL05
5CH003	Physical Chemistry	HNDCL01, HNDCL02, HNDCL03, HNDCL05, HNDCL06
5CH004	Inorganic Chemistry	HNDCL01, HNDCL02, HNDCL04
5CH008	Integrated Chemistry 2 (Organic and Analytical)	HNDCL01, HNDCL02, HNDCL04, HNDCL05, HNDCL06
5CH009	Integrated Chemistry 1	HNDCL01, HNDCL02, HNDCL03, HNDCL04, HNDCL06

### Teaching, Learning and Assessment:

There will be a range of learning activities, some of which will be blended learning (see section 10), as indeed there will be a range of assessment patterns (see section 11).

The typical learning activities that will be employed can be listed as follows:

Traditional face to face lectures with some e-lecture/podcasts.

Traditional tutorial activity with some e-tutorial work.

Hands on "in the laboratory" practical activity (working singly, in pairs and in groups where appropriate), with some e-preparation for laboratory skills.

Workshop/seminars (working in groups and including problem solving, problem-based learning).

Typically, students will be presented with theoretical information in lecture sessions and then will use workshops, group tutorials, seminars, on-line fora, electronic tutorials, directed reading and a range of IT-based activities and formative assessments to develop these concepts.

Practical skills will similarly be developed throughout the course. The level 4 practical work will be directed towards developing basic laboratory skills, which are subsequently built upon at level 5. Thus, as the student develops, there is a gradual shift from students carrying out simple practical work, where the practical schedules are provided to them, towards more extensive (multiple week) problem solving practical exercises.

### The Development of Graduate Attributes

#### Global Citizenship

It is important that students should be aware of several key industrial, environmental and other applied and research aspects of chemistry. Throughout the course, students will consider the role that chemistry plays in the broader context of chemistry-related disciplines, and the impact of chemistry upon many walks of life. This will be achieved through several integrated and specialist topic modules, for example, pharmaceutical and forensic chemistry, environmental chemistry, aspects of industrial chemistry, etc.

## Digital Literacy

Throughout the course students will use a range of standard and specialist software to prepare and present reports, assignments, presentations, etc across a wide range of modules, with increasing sophistication. Students will be expected to make use of the Universities virtual on-line learning framework (currently CANVAS) for accessing module information, submitting assignments, formative self-testing, engaging in module fora, etc. Students will be expected to make use of email for module and other University communications. One aspect of the course will encompass the use of chemistry based software such as Knowitall, molecular modelling packages and use of packages such as Excel or Graphpad Prism to manipulate data.

By the end of the course, students should be comfortable with, and be competent in, the digital world and have the flexibility to adapt to a wide range of digital activities.

## Knowledgeable and Enterprising

The course develops students' knowledge base and skills in Chemistry using the subject specific module content of all modules. In addition, the development of transferable skills improves and enhances employability beyond the field of chemistry, and indeed science in general. There are many instances of trained chemists switching to careers in chemistry-related disciplines, teaching or further research.

The emphasis on the students moving to a student centred learning approach simultaneously fosters the development of transferrable skills, together with group learning and problem solving approaches. Students are encouraged to reflect upon their learning experience and to extrapolate from this the skills that would make them stand out in their respective career pathways. As part of the project planning and advanced practical module, students need to consider CV's, job applications, and how best to present themselves, by making a formal written application for an Honours project. Students will also be directed to the relevant careers support services in the University. In addition, the RSC offers extensive careers support.

## Assessment Methods:

---

At the University of Wolverhampton, a variety of modes of assessment will be used to support and test your learning and progress and to help you develop capabilities that are valued beyond your University studies and into your working life. Your course may include a variety of assessment activities:

Written examinations (including online examinations, open and closed book examinations and quizzes)  
Coursework (for example, essays, reports, portfolios, project proposals and briefs, CVs, poster presentation)  
Practical (for example, oral and video presentations, laboratory work, performances, practical skills assessment)

In the final year of your undergraduate degree, and at the end of your postgraduate degree, you are likely to be expected to write an extended piece of work or research, such as a dissertation or a practice-based piece of research.

## Student Support:

---

General University support:

[University Learning Centres](#) are the key source of academic information for students. Learning Centres provide physical library resources (books, journal, DVDs etc.) and offer a range of study areas to allow students to study in the environment that suit them best: Social areas, quiet and silent areas. Learning Centres also provide access to wide range of online information sources, including eBooks, e-Journals and subject databases.

Learning Centres also provide students with academic skills support via the [Skills for Learning programme](#).



Students on campus can attend workshops or ask for one-to-one help on a range of skills such as academic writing and referencing. Students can access a range of online skills material at: [www.wlv.ac.uk/lib/skills](http://www.wlv.ac.uk/lib/skills)

The [University Student Support website](#) offers advice on a variety of matters (careers, counselling, student union advice, etc.) Students can also access these services by booking appointment with the SU, careers, counselling services, etc.

## Employability in the Curriculum:

---

### Employability

Consider the importance of medicines and pharmaceutical technology, industrial chemistry, hospital-based chemistry, forensic-based chemistry, environmental-based chemistry, the food and drinks industry and many other aspects of chemistry in the modern world. The UK's "chemical industry" is one of the leading industrial contributors to the national economy. There are many opportunities to apply chemical knowledge, principles and skills to a successful career in chemistry or chemistry-related discipline. "Chemistry will underpin economic growth, say industry leaders", it was recently reported in the Royal Society of Chemistry (RSC) publication, Chemistry World, on the "Strategy for delivering chemistry-fuelled growth of the UK economy".

### Outcomes

You will have studied what can perhaps be considered to be "the central science". You will have developed knowledge of the main areas of chemistry, good practical skills, literacy & numeracy skills, use of IT skills and you should be capable of logical, scientific, critical thinking and problem solving. These skills will make you well equipped for the workplace, be it in a chemistry environment or the wider world of work in general, or for further study on our BSc or MChem programmes.

### Further training

The HND chemistry diplomate will be fully capable of further study and training at BSc or MChem level.



THE UNIVERSITY OF OPPORTUNITY