

# The University of Liverpool: F102 Chemistry (MChem)

## Year 1

Semester 1	Semester 2
Introductory Organic Chemistry (30 credits)	
Introductory Inorganic Chemistry (15 credits)	Introductory Physical Chemistry (15 credits)
Introductory Spectroscopy (15 credits)	
Key Skills for Chemists 1 (15 credits)	
Foundations of Medicinal Chemistry (15 credits)	Innovative Chemistry for Energy and Materials (15 credits)
Or 15 credits of subsidiary modules from outside the Department	Or 15 credits of subsidiary modules from outside the Department

**Subsidiary modules can vary year to year and are subject to timetables.**

**Examples include:** Archaeology, Life Sciences, Oceanography & Environmental Sciences, Mathematics/Physics, Modern Languages.

## Year 3

Semester 1	Semester 2
Inorganic Materials Chemistry (15 credits)	Further Physical Chemistry (15 credits)
Further Organic Chemistry (15 credits)	Practical Chemistry: Introductory project (15 credits)
Key Skills for Chemists 3 (7.5 credits)	Catalysis (15 credits)
Practical Chemistry (22.5 credits)	<b>Two 7.5 credit modules from:</b> Advanced Functional Organic Materials Biological Energy Conversion Processes Biorenewable Chemicals from Biomass Heterocyclic Chemistry & Drug Synthesis Introduction to Chemical Engineering Protein Structure and Dynamics
An alternative is a 22.5 credit laboratory focussed research internship lasting for 6 weeks at Chulalongkorn University in Thailand (other options available). This takes place between years 2 and 3 and replaces some labs and optional modules in year 3.	

## Year 2

Semester 1	Semester 2
Physical Chemistry II (15 credits)	
Organic Chemistry II (15 credits)	Coordination & Organometallic Chemistry of the d-block (15 credits)
Preparative Chemistry: Synthesis and Characterisation (15 credits)	Measurements in Chemistry (15 credits)
Key Skills for Chemists 2 (15 credits)	
Functional Organic Materials (15 credits)	Inorganic Applications of Group Theory (7.5 credits)
Or 15 credits of subsidiary modules from outside the Department	<b>One 7.5 credit module from:</b> Applied Analytical Chemistry Chemistry for Sustainable Technologies Introduction to Medicinal Chemistry  Or 7.5 credits of subsidiary modules from other departments
For those interested in Science Communication, we offer a 15 credit module that can be taken in year 2 as an alternative to the optional modules suggested above.	

## Year 4

Semester 1	Semester 2
Chemical Research Project (60 credits)	
<b>Four 7.5 credit modules from:</b> Advanced Spectroscopy Asymmetric Synthesis and Main Group Organic Chemistry (P, S, Se) Electrochemistry Lanthanide and Actinide Chemistry Main Group Organic Chemistry Organic and Molecular Electronics	<b>Four 7.5 credit modules from:</b> Advanced Functional Materials by Design (15 credits) Asymmetric Catalysis Enzymes in Organic Synthesis Formulation Engineering (Sem1) Introduction to Nanomedicine Modelling of Functional Materials Nano Energy Materials NMR Spectroscopy Protein Structure and Dynamics Solar Energy Conversion Solid State & Energy Storage Materials Supramolecular Chemistry

The credits give a rough estimate of the length of the course. A 15 credit lecture course would involve ~35 lectures and 6 tutorials.

# The University of Liverpool: F161 Chemistry with Research in Industry (MChem)

## Year 1

Semester 1	Semester 2
Introductory Organic Chemistry (30 credits)	
Introductory Inorganic Chemistry (15 credits)	Introductory Physical Chemistry (15 credits)
Introductory Spectroscopy (15 credits)	
Key Skills for Chemists 1 (15 credits)	
Foundations of Medicinal Chemistry (15 credits)	Innovative Chemistry for Energy and Materials (15 credits)
Or 15 credits of subsidiary modules from outside the Department	Or 15 credits of subsidiary modules from outside the Department

**Subsidiary modules can vary year to year and are subject to timetables.**

**Examples include:** Archaeology, Life Sciences, Oceanography & Environmental Sciences, Mathematics/Physics, Modern Languages.

## Year 2

Semester 1	Semester 2
Physical Chemistry II (15 credits)	
Organic Chemistry II (15 credits)	Coordination & Organometallic Chemistry of the d-block (15 credits)
Preparative Chemistry: Synthesis and Characterisation (15 credits)	Measurements in Chemistry (15 credits)
Key Skills for Chemists 2 (15 credits)	
Functional Organic Materials (15 credits) Or 15 credits of subsidiary modules from outside the Department	Inorganic Applications of Group Theory (7.5 credits)
	<b>One 7.5 credit module from:</b> Applied Analytical Chemistry Chemistry for Sustainable Technologies Introduction to Medicinal Chemistry  Or 7.5 credits of subsidiary modules from other departments
For those interested in Science Communication, we offer a 15 credit module that can be taken in year 2 as an alternative to the optional modules suggested above.	

## Year 3

Semester 1	Semester 2
Industrial Placement (90 credits)	
<b>Distance learning module:</b> Advanced Chemistry (30 credits)	

## Year 4

Semester 1	Semester 2
Chemical Research Project (60 credits)	
<b>Four 7.5 credit modules from:</b>  Advanced Spectroscopy Asymmetric Synthesis and Main Group Organic Chemistry (P, S, Se) Electrochemistry Lanthanide and Actinide Chemistry Main Group Organic Chemistry Organic and Molecular Electronics	<b>Four 7.5 credit modules from:</b> Advanced Functional Materials by Design (15 credits) Asymmetric Catalysis Enzymes in Organic Synthesis Formulation Engineering (Sem1) Introduction to Nanomedicine Modelling of Functional Materials Nano Energy Materials NMR Spectroscopy Protein Structure and Dynamics Solar Energy Conversion Solid State & Energy Storage Materials Supramolecular Chemistry

The credits give a rough estimate of the length of the course. A 15 credit lecture course would involve ~35 lectures and 6 tutorials.

# The University of Liverpool: F1BF Medicinal Chemistry with Pharmacology (MChem)

## Year 1

Semester 1	Semester 2
Introductory Organic Chemistry (30 credits)	
Introductory Inorganic Chemistry (15 credits)	Introductory Physical Chemistry (15 credits)
Introductory Spectroscopy (15 credits)	
Key Skills for Chemists 1 (15 credits)	
Foundations of Medicinal Chemistry (15 credits)	Introduction to Physiology and Pharmacology (15 credits)

## Year 2

Semester 1	Semester 2
Physical Chemistry II (15 credits)	
Organic Chemistry II (15 credits)	Coordination & Organometallic Chemistry of the d-block (15 credits)
Preparative Chemistry: Synthesis and Characterisation (15 credits)	Measurements in Chemistry (15 credits)
Key Skills for Chemists 2 (15 credits)	
Principles of Pharmacology (15 credits)	Practical Pharmacology (7.5 credits)
	Introduction to Medicinal Chemistry (7.5 credits)

## Year 3

Semester 1	Semester 2
Inorganic Materials Chemistry (15 credits)	Antimicrobial Chemotherapy for Chemists (15 credits)
Further Organic Chemistry (15 credits)	Practical Chemistry: Introductory project in a medicinal chemistry related research group (15 credits)
Medicinal Chemistry of Anti-Infectives (7.5 credits)	Drug Action (15 credits)
Key Skills for Chemists 3 (7.5 credits)	Protein Structure and Dynamics (7.5 credits)
Practical Chemistry (15 credits)	Heterocyclic Chemistry & Drug Synthesis (7.5 credits)

## Year 4

Semester 1	Semester 2
Chemical Research Project in a medicinal chemistry related research group (60 credits)	
Cardiovascular and Respiratory Pharmacology (7.5 credits)	Cancer Pharmacology (7.5 credits)
Drug Metabolism and Drug Response (7.5 credits)	<b>Two 7.5 credit modules from (including at least one organic):</b> Asymmetric Catalysis Enzymes in Organic Synthesis Introduction to Nanomedicine Nano Energy Materials NMR Spectroscopy Solar Energy Conversion Solid State & Energy Storage Materials Supramolecular Chemistry
Molecular and Neuropharmacology (7.5 credits)	
Main Group Organic Chemistry (7.5 credits)	
Asymmetric Synthesis and Main Group Organic Chemistry (P, S, Se) (7.5 credits)	

The credits give a rough estimate of the length of the course. A 15 credit lecture course would involve ~35 lectures and 6 tutorials.

# The University of Liverpool: F103 Chemistry for Sustainable Energy (MChem)

## Year 1

Semester 1	Semester 2
Introductory Organic Chemistry (30 credits)	
Introductory Inorganic Chemistry (15 credits)	Introductory Physical Chemistry (15 credits)
Introductory Spectroscopy (15 credits)	
Key Skills for Chemists 1 (15 credits)	
Foundations of Medicinal Chemistry (15 credits) Or 15 credits of subsidiary modules from outside the Department	Innovative Chemistry for Energy and Materials (15 credits)

**Subsidiary modules can vary year to year and are subject to timetables.**

**Examples include:** Archaeology, Oceanography & Environmental Sciences, Mathematics/Physics, Modern Languages.

## Year 3

Semester 1	Semester 2
Inorganic Materials Chemistry (15 credits)	Further Physical Chemistry (15 credits)
Further Organic Chemistry (15 credits)	Practical Chemistry: Introductory project in an energy chemistry related research group (15 credits)
Key Skills for Chemists 3 (7.5 credits)	Catalysis (15 credits)
Practical Chemistry (22.5 credits)	Biorenewable Chemicals from Biomass (7.5 credits)
	Biological Energy Conversion Processes (7.5 credits)

## Year 2

Semester 1	Semester 2
Physical Chemistry II (15 credits)	
Organic Chemistry II (15 credits)	Coordination & Organometallic Chemistry of the d-block (15 credits)
Preparative Chemistry: Synthesis and Characterisation (15 credits)	Measurements in Chemistry (15 credits)
Key Skills for Chemists 2 (15 credits)	
Functional Organic Materials (15 credits)	Inorganic Applications of Group Theory (7.5 credits)
	Chemistry for Sustainable Technologies (7.5 credits)

## Year 4

Semester 1	Semester 2
Chemical Research Project in an energy chemistry related research group (60 credits)	
Electrochemistry (7.5 credits)	Solid State Chemistry and Energy Storage Materials (7.5 credits)
<b>Three 7.5 credit modules from:</b>  Advanced Spectroscopy Asymmetric Synthesis and Main Group Organic Chemistry (P, S, Se) Lanthanide and Actinide Chemistry Main Group Organic Chemistry Organic and Molecular Electronics	Solar Energy Conversion (7.5 credits)
	Nano Energy Materials (7.5 credits)
	<b>One 7.5 credit module from:</b> Asymmetric Catalysis Enzymes in Organic Synthesis Formulation Engineering (Sem1) Introduction to Nanomedicine Modelling of Functional Materials NMR Spectroscopy Protein Structure and Dynamics Supramolecular Chemistry

The credits give a rough estimate of the length of the course. A 15 credit lecture course would involve ~35 lectures and 6 tutorials.

# The University of Liverpool: F100 Chemistry (BSc)

## Year 1

Semester 1	Semester 2
Introductory Organic Chemistry (30 credits)	
Introductory Inorganic Chemistry (15 credits)	Introductory Physical Chemistry (15 credits)
Introductory Spectroscopy (15 credits)	
Key Skills for Chemists 1 (15 credits)	
Foundations of Medicinal Chemistry (15 credits)	Innovative Chemistry for Energy and Materials (15 credits)
Or 15 credits of subsidiary modules from outside the Department	Or 15 credits of subsidiary modules from outside the Department

**Subsidiary modules can vary year to year and are subject to timetables.**

**Examples include:** Archaeology, Life Sciences, Oceanography & Environmental Sciences, Mathematics/Physics, Modern Languages.

## Year 3

Semester 1	Semester 2
Inorganic Materials Chemistry (15 credits)	Modern Applications of Physical Chemistry (15 credits)
Further Organic Chemistry (15 credits)	Chemistry Project (15 credits)
Key Skills for Chemists 3 (7.5 credits)	<b>Four 7.5 credit modules from same Chemistry options as year 2 or:</b> Advanced Functional Organic Materials Biological Energy Conversion Processes Biorenewable Chemicals from Biomass Heterocyclic Chemistry & Drug Synthesis Introduction to Chemical Engineering
Practical Chemistry (22.5 credits)	
An alternative is a 22.5 credit laboratory focussed research internship lasting for 6 weeks at Chulalongkorn University in Thailand (other options available). This takes place between years 2 and 3 and replaces some labs and optional modules in year 3.	

## Year 2

Semester 1	Semester 2
Physical Chemistry II (15 credits)	
Organic Chemistry II (15 credits)	Coordination & Organometallic Chemistry of the d-block (15 credits)
Preparative Chemistry: Synthesis and Characterisation (15 credits)	Measurements in Chemistry (15 credits)
Key Skills for Chemists 2 (15 credits)	
Functional Organic Materials (15 credits)	<b>Two 7.5 credit modules from:</b> Applied Analytical Chemistry Chemistry for Sustainable Technologies Inorganic Applications of Group Theory Introduction to Medicinal Chemistry  Or 15 credits of subsidiary modules from other departments
Or 15 credits of subsidiary modules from outside the Department	
For those interested in Science Communication, we offer a 15 credit module that can be taken in year 2 or 3 as an alternative to the optional modules suggested.	

The credits give a rough estimate of the length of the course. A 15 credit lecture course would involve ~35 lectures and 6 tutorials.

# The University of Liverpool: F111 Chemistry with a Year in Industry (BSc)

## Year 1

Semester 1	Semester 2
Introductory Organic Chemistry (30 credits)	
Introductory Inorganic Chemistry (15 credits)	Introductory Physical Chemistry (15 credits)
Introductory Spectroscopy (15 credits)	
Key Skills for Chemists 1 (15 credits)	
Foundations of Medicinal Chemistry (15 credits)	Innovative Chemistry for Energy and Materials (15 credits)
Or 15 credits of subsidiary modules from outside the Department	Or 15 credits of subsidiary modules from outside the Department

**Subsidiary modules can vary year to year and are subject to timetables.**

**Examples include:** Archaeology, Life Sciences, Oceanography & Environmental Sciences, Mathematics/Physics, Modern Languages.

## Year 2

Semester 1	Semester 2
Physical Chemistry II (15 credits)	
Organic Chemistry II (15 credits)	Coordination & Organometallic Chemistry of the d-block (15 credits)
Preparative Chemistry: Synthesis and Characterisation (15 credits)	Measurements in Chemistry (15 credits)
Key Skills for Chemists 2 (15 credits)	
Functional Organic Materials (15 credits)	<b>Two 7.5 credit modules from:</b>
Or 15 credits of subsidiary modules from outside the Department	Applied Analytical Chemistry Chemistry for Sustainable Technologies Inorganic Applications of Group Theory Introduction to Medicinal Chemistry
	Or 15 credits of subsidiary modules from other departments
For those interested in Science Communication, we offer a 15 credit module that can be taken in year 2 or 4 as an alternative to the optional modules suggested.	

## Year 3

Semester 1	Semester 2
Industrial Placement	

## Year 4

Semester 1	Semester 2
Inorganic Materials Chemistry (15 credits)	Modern Applications of Physical Chemistry (15 credits)
Further Organic Chemistry (15 credits)	Chemistry Project (15 credits)
Key Skills for Chemists 3 (7.5 credits)	<b>Four 7.5 credit modules from same Chemistry options as year 2 or:</b>
Practical Chemistry (22.5 credits)	Advanced Functional Organic Materials Biological Energy Conversion Processes Biorenewable Chemicals from Biomass Heterocyclic Chemistry & Drug Synthesis Introduction to Chemical Engineering

The credits give a rough estimate of the length of the course. A 15 credit lecture course would involve ~35 lectures and 6 tutorials.

# The University of Liverpool: F1B2 Medicinal Chemistry (BSc)

## Year 1

Semester 1	Semester 2
Introductory Organic Chemistry (30 credits)	
Introductory Inorganic Chemistry (15 credits)	Introductory Physical Chemistry (15 credits)
Introductory Spectroscopy (15 credits)	
Key Skills for Chemists 1 (15 credits)	
Foundations of Medicinal Chemistry (15 credits)	Introduction to Physiology and Pharmacology (15 credits)

## Year 2

Semester 1	Semester 2
Physical Chemistry II (15 credits)	
Organic Chemistry II (15 credits)	Coordination & Organometallic Chemistry of the d-block (15 credits)
Preparative Chemistry: Synthesis and Characterisation (15 credits)	Measurements in Chemistry (15 credits)
Key Skills for Chemists 2 (15 credits)	
Principles of Pharmacology (15 credits)	Practical Pharmacology (7.5 credits)
	Introduction to Medicinal Chemistry (7.5 credits)

## Year 3

Semester 1	Semester 2
Further Organic Chemistry (15 credits)	Chemistry Project (15 credits)
Medicinal Chemistry of Anti-Infectives (7.5 credits)	Drug Action (15 credits)
Key Skills for Chemists 3 (7.5 credits)	Antimicrobial Chemotherapy for Chemists (15 credits)
Practical Chemistry (22.5 credits)	Heterocyclic Chemistry & Drug Synthesis (7.5 credits)
	<b>Two 7.5 credit modules from:</b> Applied Analytical Chemistry Biological Energy Conversion Processes Biorenewable Chemicals from Biomass Chemistry for Sustainable Technologies Inorganic Applications of Group Theory Introduction to Chemical Engineering
An alternative is a 22.5 credit laboratory focussed research internship lasting for 6 weeks at Chulalongkorn University in Thailand (other options available). This takes place between years 2 and 3 and replaces some labs and optional modules in year 3.	

The credits give a rough estimate of the length of the course. A 15 credit lecture course would involve ~35 lectures and 6 tutorials.





**Study Abroad** is the perfect way to explore the world, gain vital skills and increase your employability. Various Study Abroad options are available to different Chemistry programmes.

<b>Name of programme</b>	<b>Duration</b>	<b>Does it add time to my degree?</b>	<b>Will I study modules from my subject area?</b>
<b>Semester Abroad</b>	One semester	No	Yes
<b>Summer Abroad</b>	2-6 weeks	No	Dependent on programme type
<b>Year in China</b>	1 academic year	Yes - 1 additional year	No - You will take Chinese studies and language
<b>Summer Internship Module</b>	6 weeks	No	Yes - Chemistry research project

## Semester Abroad

- **USA – Semester 1:** Boston, University of Georgia, Kansas State, Washington State
- **Canada – Semester 1:** Dalhousie, McGill, University of Ottawa, Guelph
- **Australia – Semester 2:** Monash, Queensland University of Technology
- **China – Semester 2:** Fully taught in English at XJTLU closely linked to the Year 2 curriculum at Liverpool.

## Summer Abroad

- Short term placements, either a summer school or a research project.
- They do not count towards your degree.
- They add no extra time to your studies.
- You can apply to many of the summer options regardless of your degree programme or your year of study.
- Students who do not qualify for tuition-free places receive a discount on the regular fee.

## Year in China

- Students go to XJTLU after their second or final year of study.
- The year you study in China is graded on a Pass/Fail basis.
- Your degree extends by one year.
- The title of your degree changes to “Subject, e.g. Chemistry, with a Year in China”.
- If you don’t pass the Year in China, you’ll revert to your original programme and the year will be discounted when calculating your final classification.
- This programme is not available to both BSC and Mchem “Chemistry with a Year in industry”.

## Summer Internship Module

- The six weeks placement is taken during the summer before the third year of study.
- The placements replaces 22.5 credits practical work and optional modules in Year 2 study.
- The module is available to F102, F100 and F1B2 programmes.
- The placements are mainly in Thailand at Chulalongkorn University.

## Available Funding

- **Free travel insurance**
- **Tuition fees** remains the same except for the XJTLU which is £1350 for an academic year and £675 for a semester
- Still eligible to apply for **Maintenance loan/grant**
- **Travel grants:** Asia £500, USA £600 and Australia £700, summer abroad and summer internship module £250

You also can apply for the following grants which you need to pay for the first £303 towards the costs.

- Up to 3 return flights
- Visas, medical insurance and essential expenditure

## Scholarships

- **Fang-Saxby Scholarships:** Students who go on an exchange to spend a semester/Year 2 at XJTLU can apply for this which include an accommodation and tuition fee waiver and £750 spending per semester/£1500 per year.
- **Santander Scholarships:** Five scholarships worth £1000 each are available each year.
- **BUTEX Scholarships:** Ten £500 scholarships are available each year.

## Accommodation Options at XJTLU

- There are two types of **Parfait International apartments** available; either four- or six-bedroom, each with ensuite rooms, a shared couch area and kitchen. Bedrooms and the living room have heating. A television is provided in each apartment.  
**Daily rent:** RMB 40-128
- **Parfait Hotel and Apartment** mainly provides single studio rooms to tenants who prefer more privacy. **Daily rent:** RMB 60-150
- **The MBA apartments** are mainly two- or three-bedroom apartments. Apartments have a shared bathroom. The shared lounge contains a water dispenser, television, refrigerator and microwave. There are no separate kitchens in these apartments. Tenancy is for a whole apartment, and tenants have to find their own roommates. Apartments cannot be let to single individuals.  
**Daily rent:** RMB 118-165

International students can choose from various apartments around the campus at XJTLU.

Built in 2013, about 30 minutes walking distance from the University campus.



With living room, kitchen (electric hob, kettle, fridge and microwave), ensuite bathroom (in each bedroom), air-conditioning, heating, safety locker, colour TV (in the living room), telephone and internet access. There is a washing room on each floor provided with a washing machine and a dryer. A cleaning service is also provided twice per month free of charge .