



University | School of
of Glasgow | Chemistry

Chemical Studies

Level-3

Class Handbook

2019 - 2020

CHEMICAL STUDIES STAFF**Class Head: Dr Harry Miras**

Room A3-24

0141 330 4375

charalampos.moiras@glasgow.ac.uk**Deputy Class Head: Dr Stephen Sproules**

Room A5-20

0141 330 6057

Stephen.Sproules@glasgow.ac.uk**Class Secretary: Mrs Susan Lumgair**

Room A4-30

0141 330 3243

Susan.Lumgair@glasgow.ac.uk**Lecture Course**

O1	Organic Spectroscopy	Dr Bucher
O2	Organic Synthesis 1	Dr Thomson
O4	Mechanistic Organic Chemistry	Dr Hartley
O5	Reactive Intermediates	Dr Bucher
I1	Coordination Chemistry	Prof Murrie
I2	Main Group Chemistry	Dr Ganin
I4	Organometallic Chemistry	Dr Farnaby
I6	Bio-inorganic Chemistry	Prof Cronin
P1	Quantum Mechanics	Mr Kelly
P2	Symmetry and Bonding	Dr Senn
P4	Chemical Kinetics	Prof Lennon
P6	Biophysical Chemistry and Diffraction	Dr Laphorn

Lecturer**Tutorials**

Organic

Inorganic

Physical

Coordinator

Dr France

Dr Miras

Dr Frances Docherty

Group Project Work

Literature Research Project

Practical Research Project

Coordinator

Dr Harry Miras

Dr Harry Miras

Welcome from the Head of School

Welcome back to the School of Chemistry as a member of the Chemical Studies level-3 class.

The staff involved in delivering the Level-3 courses are here to help you learn and to encourage you in your studies, and we trust you will find them friendly and approachable. At Level-3 you will find that we are introducing more complex concepts and topics, but your earlier studies should have prepared you well for these.

As detailed elsewhere in this handbook, successful completion of your courses this academic year will allow you to graduate with a designated degree from the University of Glasgow.

We are here not only to help you learn, but also to support your studies more generally. If you have any problems with any of the Chemical Studies Level-3 Chemistry courses please inform, as soon as possible: a) one of your tutors, b) the appropriate lecturer or c) your class head, Dr Miras (Office A3-24 Level A3; charalampos.moiras@glasgow.ac.uk), so that we can help you.

Please make sure that you read the contents of this booklet and all associated documentation very carefully. All sections are important, but please pay particular attention to those sections dealing with Course Assessment, Absence and Plagiarism. It is absolutely imperative that you inform Dr Miras immediately if you are ill or have other extenuating circumstances that might affect you during the year. If you keep us fully informed, we can make sure that these factors can be taken into account in assessing your overall performance at the end of the year (see also <http://www.gla.ac.uk/registry/students/absence/>). Please also make sure that you are fully aware of the University of Glasgow's regulations concerning plagiarism (see <http://www.gla.ac.uk/services/senateoffice/academic/plagiarism/#d.en.87261>).

Finally, enjoy yourselves and make the most of your Level-3 studies here in Chemistry.

Professor Graeme Cooke
Head of School
Office A4-08
Graeme.Cooke@glasgow.ac.uk

The class head is Dr Harry Miras, Room A3-24 Level A3.

Email: Charalampos.moiras@glasgow.ac.uk or Tel: 0141 330 4375.

You are also welcome to contact Dr Sproules (Deputy Class Head) at any time about any aspect of the course, either directly or through the course secretary, Mrs Susan Lumgair, Room A4-30. Email: Susan.Lumgair@glasgow.ac.uk or Tel: 0141 330 3243

This booklet contains most of the course information you will need at the start of the session. However, you should get into the habit of checking the class notice boards and Moodle frequently for course announcements. The notice boards are located on the ground floor near the porters' box and on Level-4 near the entrance to the Main Lecture Theatre.

STRUCTURE OF THE CHEMICAL STUDIES COURSE

The Chemical studies course is made up of 80 credits from Chemistry and 40 credits from other level-1 or level-2 courses. It is your responsibility to ensure that you are taking at least 120 credits this academic session.

The 80 credits of Chemistry come from 4 components:

<i>Inorganic Chemistry for Chemical Studies</i>	[20 credits]
<i>Organic Chemistry for Chemical Studies</i>	[20 credits]
<i>Physical Chemistry for Chemical Studies</i>	[20 credits]
<i>Group Project Work for Chemical Studies</i>	[20 credits]

The requirements to graduate from the University of Glasgow with a designated degree in *Chemical Studies* are given in the University Calendar: See http://www.gla.ac.uk/media/media_286038_en.pdf

CHEMISTRY COURSE OUTLINE

The inorganic, organic and physical components are each made up from four lecture courses, which are supported by tutorials, and each component is assessed by an exam paper in April/May.

Lectures: Check the timetable on Moodle to find out where and when each course is held. The content and Intended Learning Outcomes (ILOs) of each course are also described on Moodle.

Tutorials: Tutorials in physical, organic and inorganic chemistry are held approximately weekly, normally on Mondays, Wednesdays and Thursdays, respectively at 10 am. The names of your tutors in organic, physical and inorganic chemistry and times of tutorials will be posted on the class notice board during week 1. Tutors may sometimes have to reschedule a tutorial. Check class notice boards regularly for news of such changes.

The tutorial system is a major part of the 3rd Year learning process. To understand the coursework properly and to do well in the degree examination you must hand in assigned work before each tutorial and attend the tutorial itself. There is a direct correlation between exam results and tutorial

attendance. Most students find the tutorials difficult – they are meant to be! Set aside enough time to tackle them. Your tutor will:

- a) Mark and assign a grade to the work you handed in (grades A - E).
- b) Record your attendance.
- c) Pass a record of your attendance and grades to the class secretaries.

Note that tutorial grades will not contribute to the end of year mark.

The Group Project Work for Chemical Studies consists of two substantive projects, one in each semester. These components have continual assessment and there is no end of year exam.

Group Literature Research Project: You will be assigned a group, a topic and a mentor in the first semester 1 workshop (W1a). As a group you need to research and review current literature and collectively produce a report on your assigned topic. You will also make a short oral contribution summarizing your results (presentations in week 11).

Group Practical Research Project: You will be assigned a group, a research project and a mentor in the workshop W2a. As a group (and guided by your mentor) you need to devise and plan the experiments that you will need to perform, in order to successfully complete your project. You will have three laboratory sessions in which to complete your experiments (weeks 21-23). You must then, collectively produce a report on your assigned topic. You will also make a poster summarizing your results (provisionally presentation in week 27).

****IMPORTANT** Safety Regulations**

Please note that due to a recent change in Safety Regulations, it is necessary for anyone working in labs in the School of Chemistry to be wearing 100% Cotton lab coats. Please check before the labs start that your lab coat is made of 100% cotton otherwise you will not be permitted to carry out lab work as part of your project work during semester 2.

Supplementary Courses: All Chemical Studies students are expected to attend the following “Employability” sessions presented by Stephen Shilton of the Careers Service; Emp1, “CV Writing” and Emp2, “Preparing for Interviews”. Both sessions will be held in the usual timetabled lecture theatre for that day and time.

ATTENDANCE AND PARTICIPATION

The Class Work comprises all Level-3 lectures, tutorials, workshops, presentations and examinations and all these components are compulsory.

AWARD OF CREDITS: The minimum requirement for an award of credits is participation in at least 75% of the Class Work. This means 75% of all tutorials, 75% of all workshops and 75% of all lectures. Attendances at all these Class Work components will be monitored.

Participation at a tutorial comprises both of (a) submission of pre-tutorial work and (b) attendance at the tutorial. Pre-tutorial work must be submitted prior to the tutorial on time as requested and will also be noted by tutors. It is understandable that you may not be able to complete all pre-tutorial work. It should be clear however to your tutor if you have made a reasonable attempt at this work. Your tutor, therefore, will use their discretion when deciding if a reasonable attempt has been made. Work handed in at the start of a tutorial will not be considered. You must participate in at least 75% of Inorganic tutorials, 75% of Organic tutorials and 75% of Physical tutorials.

If you do not meet these requirements, you will not normally be awarded an overall grade or credits for the course(s). If you receive a CR (Credit Refused) for ANY of your courses, this will prevent you from graduating.

Please refer to the University of Glasgow Calendar for further details at http://www.gla.ac.uk/media/media_286038_en.pdf

The class head will monitor your commitment to the course and factor that into an evaluation of your performance in the class exam (weeks 12/13). These will be discussed individually with students at the assessment interviews with Drs. Miras and Sproules during weeks 19 and 20.

If your attendance and participation has been affected due to illness or other extenuating circumstances, you must provide a medical certificate or written confirmation detailing the circumstances. Depending upon its severity, this may be taken into consideration.

EXAMINATIONS

To help you prepare for the degree examination, a class examination, consisting of three papers (inorganic, organic and physical), will be held in weeks 12/13.

The final Degree examinations are held in April/May.

Note that normally you may take a molecular model kit but not textbooks or periodic tables into final year examinations. Occasionally, you may be allowed to take a specific textbook into an examination. You will be told well in advance if this is so.

The use of programmable calculators is not allowed in examinations. (Please refer to the University Fees and General Information for Students section 20 of the University Calendar, http://www.gla.ac.uk/media/media_286038_en.pdf).

In the Degree Examination; the level-3 degree examination is based on three, 2-hour written papers:

The organic chemistry paper will be based on lecture courses O1, O2, O4 and O5.

The inorganic chemistry paper will be based on lecture courses I1, I2, I4 and I6.

The physical chemistry paper will be based on lecture courses P1, P2, P4 and P6.

These Level-3 Degree examination papers contribute 100% to your final grade for *Organic Chemistry for Chemical Studies*, *Inorganic Chemistry for Chemical Studies* and *Physical Chemistry for Chemical Studies* courses.

ILLNESS AND ABSENCE FROM CLASSES

If you are unable to attend classes you must follow the new University guidelines regarding absence, which are available at the following link: <http://www.gla.ac.uk/services/senateoffice/academic/studentpolicies/absencepolicystudents/#d.en.105167>

You should also contact Dr Miras as soon as possible to explain the reasons for your absence.

If you believe that your performance in the course has been adversely affected for reasons, which you wish to draw to the attention of the Board of Examiners, it is essential that you write to Dr Miras to inform him of the circumstances.

POLICY ON SUMMATIVE ASSESSMENT

All feedback on coursework used in assessment, including mid-year class exam/class test marks and project work, is strictly provisional for your guidance only, and is subject to ratification by the Board of Examiners and external examiners at the end of the academic year. You must retain all copies of

assessed work (lab notebooks, exam scripts, etc.) and have them available for inspection by the examiners if requested at the end of the year. You will be given reasonable advance warning should this be required.

PLAGIARISM

Plagiarism is the submission of someone else's work as one's own without acknowledgement. As recent cases have shown, it is regarded as a serious offence against University discipline. You must read the Senate-approved Plagiarism Statement, which explains the policy of the University.

Degrees from Glasgow University recognise personal achievement. It follows that any work you submit must be your own. It may be proper, and even desirable, to include words, data or ideas taken from books or articles, the world-wide web or even from other students in work you submit for assessment. But you must make it completely clear what is yours and what you have taken from others. If you copy someone else's words you must enclose them with quotation marks. You should also give a verifiable reference: for example, F.A. Cotton and G. Wilkinson, *Advanced Inorganic Chemistry*, Fifth Edition, John Wiley & Sons, New York, 1988, page 1219 or J. Smith, Level-3 Inorganic Laboratory Report, April 2nd, 2000.

This regulation applies to all work submitted for assessment, including lab reports, class tests and research projects unless you have specifically been told otherwise, for example in the case of a group project or when a number of students share experimental data.

You are required to sign a form stating that any work you hand in is your own. This form can be downloaded from Moodle.

See University Guidelines at the following address:

<http://www.gla.ac.uk/services/senateoffice/academic/plagiarism/#d.en.87261>

PENALTIES FOR LATE SUBMISSION OF COURSE WORK

Two Schedule A grade points for each working day, or part of a working day, by which the work was submitted after the due date and time for a maximum of five working days; work submitted more than five days after the due date and time would be awarded a Grade H.

This means that if work assessed as B1 was submitted 1 day late it will be awarded grade B3, after two days it will be awarded C2, etc.

Grade	Grade Points
A1	22
A2	21
A3	20
A4	19
A5	18
B1	17
B2	16
B3	15
C1	14
C2	13
C3	12
D1	11
D2	10
D3	9
E1	8
E2	7
E3	6
F1	5
F2	4
F3	3
G1	2
G2	1

Total grade points = (credits) x (grade points)

Grade point average (GPA) = (Total grade points)/ (Total credits)

THE CHEMISTRY BRANCH LIBRARY

Our librarian has a selection of recommended textbooks, which are available for short term loan and can also advise students on how to use the extensive collection of chemical literature held in the library.

(a) RECOMMENDED PURCHASES

Molecular models, table molecular model kit such as Organic/Inorganic Orbit kit, Cochranes of Oxford Ltd, Leafield, Oxford OX8 5NT. <http://www.cochranes.co.uk/main.asp>. Alternative molecular model kits are sold in University bookshop.

Shriver & Atkins, *Inorganic Chemistry*, P.W. Atkins, T.L. Overton, J.P. Rourke, M.T. Weller, F.A. Armstrong, OUP, 6th Edition, 2014. Alternatively, if already purchased during 2nd Year; *Inorganic Chemistry*, P.F. Shriver, P.W. Atkins and C.H. Langford, OUP, 4th Edition, 2006.

Weller, Overton, Rourke & Armstrong

Spectroscopic Methods in Organic Chemistry, D.H. Williams and I. Fleming, McGraw-Hill, 5th Edition.

Organic Chemistry, J. Clayden, N. Greeves, S. Warren and P. Wothers, OUP, 2nd Edition.

Atkins' Physical Chemistry, P.W. Atkins and J. De Paula, 9th Edition. Alternatively, 8th Edition, if already purchased during 2nd Year.

(b) BOOKS RECOMMENDED FOR CONSULTATION – available in the Chemistry Branch Library

Maths for Chemists, M. Cockett and G. Doggett, RSC Publishing (Tutorial Chemistry Texts) 2nd Edition.

Introduction to Molecular Symmetry, J. S. Ogden, Oxford Chemistry Primers (97).

Molecular Quantum Mechanics, P. W. Atkins and R. S. Friedman, OUP, 4th Edition, 2004.

Quantum Mechanics in Chemistry, J. Simons and J. Nichols, OUP.

Fundamentals of Molecular Spectroscopy, C. N. Banwell, McGraw-Hill, 4th Edition.

Molecular Spectroscopy, J. M. Brown, Oxford Chemistry Primers.

Nuclear Magnetic Resonance, P. J. Hore, Oxford Chemistry Primer (32).

Photochemistry, C.E. Wayne and R. P. Wayne, Oxford Chemistry Primers (39).

Crystal Structure Determination, W. Clegg, Oxford Chemistry Primers (60).

Designing Organic Syntheses, S. Warren, Wiley, 1978.

The Disconnection Approach, S. Warren, Wiley, 2nd Edition, 2008.

Reactive Intermediates, C. J. Moody and G. H. Whitham, Oxford Chemistry Primers (8).

Selectivity in Organic Synthesis, R. S. Ward, Wiley, 1999.

Organic Stereochemistry, M. J. T. Robinson, Oxford Chemistry Primers (88).

Stereochemistry, D.G. Morris, RSC Publishing (Tutorial Chemistry Text).

An Introduction to Medicinal Chemistry, G. Patrick, OUP, 4th Edition, 2009.

Basic Solid State Chemistry, A. R. West, Wiley, 2nd Edition.

Organometallics, C. Elschenbroich, Cambridge, 3rd Edition.

Solid State Chemistry - an Introduction, L. Smart and E. Moore, CRC Press.

Principles and Practice of Heterogeneous Catalysis, J.M. Thomas and W.J. Thomas, Weinheim, 1996.

The Basis and Applications of Heterogeneous Catalysis, M. Bowker, Oxford Chemistry Primers.

You will be notified of any additional references by your lecturer.

