

# **BSc (Hons) Chemistry (Accredited by the Royal Society of Chemistry)**

## **SC310 (Under Review)**

### **1. Context and Objectives**

Chemistry is considered as the "central" science because it interconnects many other sciences. Chemistry seeks to understand the nature of matter in terms of atoms and molecules and the changes it undergoes. In that context the Department offers a three year full time BSc (Hons) Chemistry programme, suitable for a wide range of career goals, both industrial and academic.

The objectives of the Department of Chemistry are:

- To provide students with the appropriate level of modern and comprehensive chemical education required for life and work in our technologically advanced society.
- To develop appropriate practical skills taking into account chemical safety and security.

### **2. Learning outcomes**

- To demonstrate knowledge of major theories and principles in the core areas of chemistry (K)
- To use and develop various experimental techniques (P)
- To plan, conduct and report a chemical study (C)
- To develop critical thinking and problem-solving skills (C)
- To tackle problems in the work place using theories and principles of chemistry (T)
- To work independently or as part of a team (T)
- To communicate ideas, principles and theories effectively by oral, visual and written means (T)
- To apply basic statistical and numerical skills to physicochemical data (T)

Attributes developed

C- Cognitive/analytical; K- Subject knowledge; T- Transferable skills; P- Professional/practical skills

### **3. Teaching and learning methods**

- Face to face
- Online teaching
- Self-learning
- Tutorials
- Practicals
- Designing/planning of experiments
- Flip classroom
- Assignments/case studies
- Lab/field visits
- Seminars

### **4. Entry Requirements**

- General  
As per General Entry Requirements for admission to the University for undergraduate degrees.
- **Programme Requirements**

Credit at GCE 'O' level in Mathematics or equivalent.  
Pass at GCE 'A' Level in Chemistry (Min grade 'C')

## 5. Programme Duration

BSc (Hons) Chemistry	<b>Normal</b> 6 Semesters	<b>Maximum</b> 10 Semesters
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## 6. Minimum LCCS Credits Required

For award of the BSc (Hons) Chemistry Undergraduate degree award, students must obtain at least 210 LCCS credits

The breakdown is as follows:

Year	No. of Core Modules	No. of Elective Modules <sup>a</sup>	Project	Total LCCS Credits	No. of Learning Hours
<b>Year 1</b>	7 (62 LCCS credits)	-	-	62	1860
<b>Year 2</b>	5 (52 LCCS credits)	4 (24 LCCS credits)	-	76	2280
<b>Year 3</b>	3 (36 LCCS credits)	3 (18 LCCS credits)	1 (18 LCCS credits)	72	2160
<b>Total</b>	<b>15</b> <b>(150 LCCS credits)</b>	<b>7</b> <b>(42 LCCS credits)</b>	<b>18</b>	<b>210</b>	<b>6300</b>

<sup>a</sup> For BSc (Hons) Chemistry: 42 LCCS credits from electives offered by the Department of Chemistry with 24 LCCS credits (four electives) from year 2 and 18 LCCS credits (three electives) from year 3.

- For each Academic Year  
Minimum 36 LCCS credits; Maximum (including retake modules, but excluding exempt modules): 96 LCCS credits.

## 7. Assessment and Deadlines

Each module will carry 100 marks (i.e. expressed as %) and will be assessed as follows (unless otherwise specified):

Assessment will be based on a written examination of 3-h duration for 10/12 LCCS credit modules and 2-h for 6 LCCS credit modules and on continuous assessment carrying 40% of total marks, except for a programme where the structure makes for other specific provision(s). Continuous assessment may be based on laboratory work, presentations, case studies and assignments and should include at least 1 class test for 6 LCCS credit modules and 2 class tests for 10/12 LCCS credit modules.

An overall total of 40% for combined continuous assessment and written examination components would be required to pass a module, without minimum thresholds within the individual continuous assessment and written examination.

The core modules namely ILT1010e(1) and CHEM 1061(1) as well as the elective modules namely CHEM 2065(3) and CHEM 2070(3) will be taught and examined in the first semester.

CHEM 1051Y(1) and CHEM 2051Y(3) will be assessed solely by continuous assessment.

Modules will carry the weightings of 1, 3 or 5 depending on their status (Introductory, Intermediate or Advanced). Weighting for a particular module is indicated within parentheses in the module code.

## 8. List of Modules

### A. CHEMISTRY CORE MODULES (168 LCCS credits)

Code	Module Name	Contact/ Hrs (L + P)	Self-Study /Hrs	Other Learning Activities/ Hrs	LCCS Credits
CHEM 1011Y(1)	Organic Chemistry I	50+0	100	150	10
CHEM 1021Y(1)	Physical Chemistry I	50+0	100	150	10
CHEM 1031Y(1)	Inorganic Chemistry I	50+0	100	150	10
CHEM 1041Y(1)	Analytical & Environment Chemistry I	50+0	100	150	10
CHEM 1051Y(1)	Practical Chemistry I	0+140	100	60	10
CHEM 1061(1)	Maths for Chemists	30+0	60	90	6
ILT 1010e(1)	Digital Literacy	O.E.*	60	90	6
CHEM 2011Y(3)	Organic Chemistry II	60+0	120	180	12
CHEM 2021Y(3)	Physical Chemistry II and Polymer Chemistry I	60+0	120	180	12
CHEM 2031Y(3)	Inorganic Chemistry II	60+0	120	180	12
CHEM 2041Y(3)	Analytical Chemistry II	30 +0	60	90	6
CHEM 2051Y(3)	Practical Chemistry II	0+140	100	60	10
CHEM 3000Y(5)	Project	90	180	270	18
CHEM 3011Y(5)	Organic Chemistry III	60+0	120	180	12
CHEM 3021Y(5)	Physical Chemistry III	60+0	120	180	12
CHEM 3031Y(5)	Inorganic Chemistry III	60+0	120	180	12

\*O.E – online education

### B. DEPARTMENTAL ELECTIVES (Not all modules may be on offer)

Code	Module Name	Contact/ Hrs (L + P)	Self- Study /Hrs	Other Learning Activities/ Hrs	LCCS Credits
CHEM 2064Y(3)	Topics in Biochemistry	27+ 6	60	90	6
CHEM 2065(3)	Industrial Chemistry	27+ 6	60	90	6
CHEM 2066Y(3)	Computational Chemistry	24+12	60	90	6
CHEM 2067Y(3)	Environmental Chemistry II	27+ 6	60	90	6
CHEM 2070(3)	Forensic Chemistry I	24+12	60	90	6
CHEM 3064Y(5)	Polymer Chemistry II	27+ 6	60	90	6
CHEM 3065Y(5)	Selected Topics in Environmental and Analytical Chemistry	27+ 6	60	90	6
CHEM 3066Y(5)	Quality Control and Quality Management	24+12	60	90	6
CHEM 3067Y(5)	Supramolecular Chemistry	30+0	60	90	6
CHEM 3070Y(5)	Forensic Chemistry II	27+ 6	60	90	6

9. Programme Plan – BSc (Hons) Chemistry (Accredited by the Royal Society of Chemistry)

<b><u>YEAR 1</u></b>					
<b>Code</b>	<b>Module Name</b>	<b>Contact/ Hrs (L + P)</b>	<b>Self- Study /Hrs</b>	<b>Other Learning Activities/ Hrs</b>	<b>LCCS Credits</b>
<b>CORE</b>					
CHEM 1011Y(1)	Organic Chemistry I	50+0	100	150	10
CHEM 1021Y(1)	Physical Chemistry I	50+0	100	150	10
CHEM 1031Y(1)	Inorganic Chemistry I	50+0	100	150	10
CHEM 1041Y(1)	Analytical & Environmental Chemistry I	50+0	100	150	10
CHEM 1051Y(1)	Practical Chemistry I	0+140	100	60	10
CHEM 1061(1)	Maths for Chemists	30+0	60	90	6
ILT 1010e(1)	Digital Literacy	O.E.*	60	90	6
*O.E –lectures and online study				Subtotal	62
<b><u>YEAR 2</u></b>					
<b>Code</b>	<b>Module Name</b>	<b>Contact/ Hrs (L + P)</b>	<b>Self- Study /Hrs</b>	<b>Other Learning Activities/ Hrs</b>	<b>LCCS Credits</b>
<b>CORE</b>					
CHEM 2011Y(3)	Organic Chemistry II	60+0	120	180	12
CHEM 2021Y(3)	Physical Chemistry II and Polymer Chemistry I	60+0	120	180	12
CHEM 2031Y(3)	Inorganic Chemistry II	60+0	120	180	12
CHEM 2041Y(3)	Analytical Chemistry II	30+0	60	90	6
CHEM 2051Y(3)	Practical Chemistry II	0+140	100	60	10
<b>ELECTIVES</b>					
CHEM 2064Y(3)	Topics in Biochemistry	27+ 6	60	87	6
CHEM 2065(3)	Industrial Chemistry	27+ 6	60	87	6
CHEM 2066Y(3)	Computational Chemistry	24+12	60	84	6
CHEM 2067Y(3)	Environmental Chemistry II	27+ 6	60	87	6
CHEM 2070(3)	Forensic Chemistry I	24+12	60	84	6
Subtotal (core and 4 electives)					76
<b><u>YEAR 3</u></b>					
<b>Code</b>	<b>Module Name</b>	<b>Contact/ Hrs (L + P)</b>	<b>Self- Study /Hrs</b>	<b>Other Learning Activities/ Hrs</b>	<b>LCCS Credits</b>
<b>CORE</b>					
CHEM 3000Y(5)	Project	90	180	270	18
CHEM 3011Y(5)	Organic Chemistry III	60+0	120	180	12
CHEM 3021Y(5)	Physical Chemistry III	60+0	120	180	12

CHEM 3031Y(5)	Inorganic Chemistry III	60+0	120	180	12
<b>ELECTIVES</b>					
CHEM 3064Y(5)	Polymer Chemistry II	27+ 6	60	87	6
CHEM 3065Y(5)	Selected Topics in Environmental and Analytical Chemistry	27+ 6	60	87	6
CHEM 3066Y(5)	Quality Control and Quality Management	24+12	60	84	6
CHEM 3067Y(5)	Supramolecular Chemistry	30+0	60	90	6
CHEM 3070Y(5)	Forensic Chemistry II	27+ 6	60	87	6
Subtotal (core and 3 electives)					72
Grandtotal					210