

**St George's, University of London**  
**Scheme of Assessment for BSc (Hons) Clinical Pharmacology**

**1. General**

- 1.1 This Scheme of Assessment details the assessments for the BSc (Hons) Clinical Pharmacology degree, as required under section 7 of the SGUL General Regulations for Students and Programmes of Study. The Board of Examiners for the BSc (Honours) Degree in Clinical Pharmacology (the Board) has ultimate responsibility for the standard of the examinations and for their fair conduct.
- 1.2 The Scheme of Assessment is formulated and approved by the Undergraduate Medicine and Biomedical Education Committee (UMBEC) as a supplementary document to the Programme Regulations and General Regulations. The details of assessments in this Scheme are subject to the provisions for assessment in paragraphs 8 – 11 of the Programme Regulations.
- 1.3 The module leads and year leads shall act as internal examiners. The module examiners will coordinate the setting of all assessments for their modules, the year leads will co-ordinate the setting of assessments across all modules within their year. The internal examiners will obtain approval of the assessments from the external examiner(s); arrange for the marking of assessments and oversee the conduct of assessments and report results to the Board.
- 1.4 External examiners will be appointed and will moderate the setting and marking of assessments.

**Overview of assessment and progression****Modules**

Teaching and assessment will be based on 6 main modules, which will run concurrently throughout the 3 years of the course.

- Year 1. Modules will be assessed by in-course assessment (50%) and end of year examination (50%).
- Year 2. Modules will be assessed by in-course assessment (50%) and an examination at the end of semester 3 (50%).
- Year 3. Modules will be assessed by in-course assessment (50%) and end of year examination (50%).

**Research projects**

- Year 2. A practical research project will be assessed by research proposal (10%), a short written report (40%) and an oral presentation (50%).
- Year 3. A literature based research project will be assessed by written report (100%)

**Skills portfolio**

Students will use an electronic portfolio to keep a record of skills developed during the course. The portfolio will include a log of skills performed, reflective writing and assessment of competence. For

each year of the course, students must complete a specified set of assessments as a condition for entry into the end of year exams.

**Table 1. Progression and contribution to degree classification by year**

	<b>Assessment</b>	<b>Progression to next year of course</b>	<b>Contribution to degree classification</b>
Year 1 (120 credits)	Skills portfolio  Modules In course assessment (50%) End of year exam (50%)	Complete year 1 requirements to enter year 1 exams  Pass each module at 40%, achieving at least 35% in both the in-course assessment and end of year exam components for each module	
Year 2 (120 credits)	Skills portfolio  Modules In course assessment (50%) Semester 3 exam (50%)  Research project	Complete year 2 requirements to progress to year 3 including placement sign off.  Pass each module at 40%, achieving at least 35% in both the in-course assessment and end of year exam components for each module  Achieve a total pass mark of 40% for the project	15%  15%
Year 3 (120 credits)	Skills portfolio  Modules In-course assessment End of year exams  Literature research project	Complete year 3 requirements to enter year 3 exams	61.25%  8.75%

## **2. Details of assessments**

### **2.1 Assessment content**

Teaching in the BSc (Hons) in Clinical Pharmacology will be based on 6 main modules:

- Fundamentals of science (FS) – the human biology needed to understand and learn pharmacology
- Pharmacokinetics (PK) –how the body handles drugs
- Pharmacodynamics (PD) –how drugs exert their effects on the body
- Drug development and clinical trials (DD) – how drugs are discovered and developed as medicines
- Drugs in healthcare (DH)–how information from clinical trials and drug development is used to guide the use of medicines for patients in clinical practice
- Data and statistics (DS) – how to generate, handle, analyse and interpret research data relating to drugs

Students will also complete a skills portfolio and do two research projects. Students will accumulate 120 credits for each year of the course. The credit allocation for each component of the course by year is shown in tables 2-4.

### **Skills portfolio**

Students will collect evidence of development of laboratory and clinical research skills, presentation, writing and personal skills throughout the course using a portfolio. The portfolio will include:

- Evidence of having performed the activity e.g. slides for a presentation, skills log book
- Competence assessment e.g. for clinical trials and laboratory skills
- Reflection on personal and professional development and multisource feedback from tutors and colleagues

Completion of the required elements of the portfolio will be required for entry into examinations or progression between years and for completion of the degree.

For many elements completion will be all that is required, but for some elements e.g. intermediate life support, certification of competence will be required

This will be determined by the portfolio assessment team, which will include portfolio tutors and the course administrator.

**Table 2. Credit allocation in year 1**

<b>Module</b>	<b>Overview of Content</b>	<b>Credit value</b>
Fundamentals of Science 1	<p>This module will cover the human biology that students will need to understand to learn pharmacology.</p> <ul style="list-style-type: none"> <li>• Fundamentals of the living cell</li> <li>• Fundamentals of pathology</li> <li>• Fundamentals of physiology</li> </ul>	30
Pharmacokinetics 1	<p>Pharmacokinetics is the science of how the body handles drugs. Students will learn how drugs are given and absorbed into the body, how they are cleared from the body by the liver and kidney and how the concentration of drugs in the body relates to their effect</p>	15
Pharmacodynamics 1	<p>Pharmacodynamics is the science of how drugs exert their effects on the body. Focus will be given to the major targets: receptors, ion channels enzymes and transporters and learn about how commonly used drugs work in the treatment of disease.</p>	15
Drug development 1	<p>Drugs are discovered and tested in the laboratory, given to humans for the first time, then tested in clinical trials before they are licensed to use in healthcare. Students will learn the theory behind these processes and the practical skills needed to do research studies in humans.</p>	15
Drugs in healthcare 1	<p>Students will learn about the prescribing process and through healthcare visits will observe practitioners prescribing medicines.</p>	15
Data and statistics 1	<p>A good understanding of data and statistics is essential to be able to do research and understand the results of other researchers. Students will be introduced to statistical theory and taught to use statistical software to analyse data</p>	15

Skills portfolio	A collection of evidence of development of skills required to work in drug development and research	15
<b>Total</b>		<b>120 Credits</b>

**Table 3. Credit allocation in year 2**

Module	Overview of Content	Credit value
Fundamentals of science 2	<p>This module will cover the human biology that students will need to understand to learn pharmacology.</p> <ul style="list-style-type: none"> <li>Fundamentals of the living cell</li> <li>Fundamentals of pathology</li> </ul> <p>Fundamentals of physiology</p> <p>This year the focus will be on the brain, cancer, developmental and reproductive biology.</p>	10
Pharmacokinetics 2	<p>Material will focus on factors that change how the body handles drugs. Topics will include: age and size; pregnancy and breastfeeding; disease; genetics; and interactions with other drugs. Students will learn about how pharmacokinetics affect dosing of drugs and how monitoring patients can be used to adjust drug doses using patient case studies.</p>	10
Pharmacodynamics 2	<p>Material will focus on drugs used to treat common diseases, including neurological disease, cancer, pain, dementia, contraception, development of novel therapies and new treatment modalities including gene therapy and biologicals.</p>	10
Clinical trials and drug development 2	<p>Several types of clinical trials and the processes need to deliver them will be covered in this section. The skills portfolio will be developed through writing scientific documents, doing clinical skills (e.g. taking blood, measuring blood pressure, doing basic life support) and reading scientific papers.</p>	10

Drugs in healthcare 2	Students will learn about the processes required to get a drug to market and how data about drugs is processed and used to decide how to treat patients in healthcare	10
Data and statistics 2	Students will develop data analysis skills and learn how to interpret statistical reports in scientific papers.	10
Research project, employability and skills portfolio	Students will spend 6 weeks full time doing a research project, which will be laboratory based or clinically-focused. They will spend 5 weeks in an industrial setting and complete a skills portfolio.	60
<b>Total</b>		<b>120 credits</b>

**Table 4. Credit allocation in year 3-provisional content**

Module title	Overview of Content	Credit value
<b>Compulsory</b>		
Hot topics in clinical pharmacology	This module will look at latest advances in therapeutics through the lens of the clinical pharmacology modules studied in years 1 and 2	30
Written research project	Students will select a research topic and use scientific literature to establish what is already known on the subject. Projects may focus on laboratory or clinical science as they relate to pharmacology. Students should select one laboratory-focussed and one clinical-focussed topics for their 2 research projects (years 2 and 3). They will develop a research question or hypothesis and design a study to investigate their hypothesis. They will write this up as a funding proposal for assessment.	15
<b>Two advanced clinical pharmacology modules from:</b>		
Advanced pharmacokinetics	Students will be taught basic computer techniques to 'model' pharmacokinetic processes from human data and learn to interpret these models. The module will demonstrate how these techniques are used in drug development to help select dose.	30
Advanced clinical trials and drug development	Students will develop more advanced knowledge and skills in clinical trials and drug development. They will learn about novel trial designs, trials using high risk drugs (e.g. for cancer), trials using novel therapies (e.g. nanomedicine, gene therapy) and how drugs are tested in children and pregnant women.	30
Advanced drugs in healthcare	Students will learn more about how drugs are regulated and how organisations such as the national institute for healthcare excellence (NICE) and the medicines and healthcare products regulatory agency (MHRA) influence the use of medicines. Students will learn how to pull research studies together (systematic review) and interpret data from these big reviews (meta-analysis).	30
<b>One 15 credit module from:</b>		
Regulatory science	This module will explore the regulations underlying drug development worldwide. It will develop skills in regulatory science.	15
Drug targets	This module will explore proteins targeted by drugs and consider how genetics and disease can alter response to therapy.	15
Big data	Students will learn about different types of big data and how it can be exploited in the process of drug development.	15
<b>Total</b>		<b>120 Credits</b>

## 2.2 Assessment structure

### Year 1

Modules will be assessed by in-course assessment and by end-of-year examination. Students must achieve the combined pass mark (40%) for the in-course assessment and the end of year examinations for each module to progress to year 2.

- *In-course assessment.* Students will undertake a weekly quiz (worth between 5 and 15 marks depending on the weeks content) to test their understanding of the content taught in the previous week. The quizzes will include questions relating to the 6 modules, depending on the topics studied in the preceding week. Over the year this will be stratified to ensure appropriate weighting of testing across the modules as per allocated credits (table 2). depending on the content tested. A key feature of these quizzes will be feedback and discussion so that students can assess progress and develop a synoptic understanding. There will also be two end of term assessments of a similar format (each about 45-60 questions). In addition, there will be some ad hoc assignments such as data interpretation, writing of a patient information document and construction of a laboratory report.
- *End of year exam.* There will be two 2.5 h exam papers involving single best answer, short answer questions and extended short answer questions. The exams will be blueprinted by module in accordance with the required weighting (table 2).
- *Skills portfolio.* Students will collect evidence of skills development in an electronic portfolio. This will include evidence of skills (e.g. basic life support, laboratory skills), evidence of skills (e.g. presentations and scientific writing) and reflection on development and practice. A key feature of these a will be feedback and discussion so that students can assess progress and develop a synoptic understanding.

## **Year 1 Portfolio requirements**

Students will complete a skills portfolio before progressing to year two. The portfolio will be comprised of laboratory and clinical skills acquisition, oral presentation, scientific writing, peer assessment and reflective practice. They will have to show their engagement with the portfolio through the entire course of the year.

Students should meet all portfolio requirements by week 28 so that their eligibility to enter the end of year examinations (which are in week 31) can be assessed

A student who fails to meet the skills portfolio requirements for year 1 by week 28 may be required to undertake further assessments or remedial assignments to fulfil requirements before resubmitting the portfolio.

- Remediation will occur during the revision period (week 29), with resubmission of the portfolio by the beginning of week 30 to allow the student to enter the end of year 1 exams in week 31

Students who fail this reassessment will be eligible to be considered for a discretionary third and final attempt. This may occur in one of the following periods:

- Outside the scheduled term dates for the programme, with portfolio resubmission 1 week before the year 1 resit examinations to allow the student to enter the resit exams for year 1
- In the following academic year after a period of further study, reflection and assessment by week 28 of that year, to allow the student to enter the end of year 1 exams in that year

Resits will be timed in the summer to allow sufficient time for remediation and revision and followed by a separate exam board

## Year 2

Modules will be assessed by in-course assessment and by an examination that follows semester 3. Students must exceed the combined pass mark (40%) for the in-course assessment and the end of year examinations for each module to progress to year 3. Year 2 will contribute 30% of the marks towards the degree classification; half of these (15%) will be from the module in course assessment and examination, the other half (15%) will be from the research project.

- *In course assessment.* In semester 3, students will undertake a fortnightly quiz to test their understanding of the content taught in the previous weeks plus an end of term assessment. The quizzes will include questions relating to the 6 modules, depending on the topics studied in the preceding week. Over the year this will be stratified to ensure appropriate weighting of testing across the modules as per allocated credits (table 3). A key feature of these quizzes will be feedback and discussion so that students can assess progress and develop a synoptic understanding.
- *Year 2 exam.* The course material learnt by the end of semester 3 will be assessed by synoptic written exams. There will be two 2.5 h exam papers involving single best answer and short answer questions. The exam will be blueprinted by module in accordance with the required weighting for year 2 (table 3).
- *Practical research project.* Students will do this in semester 4. They will be assessed on: production of a research proposal that outlines the background to the study, techniques to be employed and statistics (10% of project mark); project write up as a short report in the style of a British Journal of Pharmacology/Clinical Pharmacology research paper (40% of project mark); and an oral presentation following and marked by a strict rubric provided by staff (50% of project mark).
- *Industrial placement.* Students will spend 5 weeks in an industrial setting. They will write a 500 word maximum reflective piece and give a short presentation about their experience. There are no marks associated with the industrial placement but satisfactory production of the two pieces are requirements of the skills portfolio.
- *Skills portfolio.* Students will collect evidence of skills development in an electronic portfolio. This will include evidence of skills (e.g. basic life support, laboratory skills), communication ability (e.g. presentations and scientific writing) and reflection on their industrial placement. Completion of the skills portfolio carries no marks but is a requirement of progression to year 3.

Students should meet all year 2 portfolio requirements by week 26 so that their eligibility to progress to year 3 can be assessed before the year 2 exam board

A student who fails to meet the skills portfolio requirements for year 2 by week 26 may be required to undertake further assessments or remedial assignments to fulfil requirements before resubmitting the portfolio.

- Remediation will occur during weeks 26 and 27, with resubmission of the portfolio by the beginning of week 28 to allow the student to be considered for progression to year 3 in the exam board.

Students who fail this reassessment will be eligible to be considered for a discretionary third and final attempt. This may occur in one of the following periods:

- Outside the scheduled term dates for the programme, with portfolio resubmission 1 week before the year 2 resit examinations
- In the following academic year after a period of further study, reflection and assessment by week 26 of that year, to allow the student to be considered for progression to year 3 in that year 2 exam board

Resits will be timed in the summer to allow sufficient time for remediation and revision and followed by a separate exam board

### Year 3

- Satisfactory completion of the skills portfolio will be a requirement for entry to year 3 summative exams. Year 3 portfolio requirements will be published at the beginning of year 3
- Each module will be assessed using a combination of in-course assessment and end of year exams and contribute marks in proportion to their credit allocation (table 4)
- A written literature research project will be marked by written report

### 3. Assessment process

#### 3.1 Instruction to Markers

##### 3.1.1 Marking of assessments

Each component of the examination (i.e. each question of the written paper, in-course assessment, project report and viva) should be marked on a percentage scale. The table below is a generic description of the criteria used in marking written assignments within examinations and in-course assessments. Specific criteria descriptions for marking reports, vivas and in-course assessment of research projects will be provided separately and made available to students.

**Table 5. Generic marking descriptors**

Mark (%)	Degree Equivalent	Notes to examiners marking individual pieces of work
90-100	1 <sup>st</sup>	Well organised and well-expressed answer which is <b>outstanding</b> in all criteria. Demonstrates clear understanding, evidence of independent study and critical evaluation. Covers all aspects of the subject that could reasonably be expected, accurately and in sufficient detail.
80-89	1 <sup>st</sup>	Well organised and well expressed answer which shows <b>excellent</b> understanding, evidence of independent study <u>and</u> critical evaluation. Covers all aspects of the subject that could reasonably be expected, accurately and in sufficient detail.
70-79	1 <sup>st</sup>	Well organised and well expressed answer which shows <b>very good</b> understanding, and evidence of independent study <u>or</u> critical evaluation. Covers all major aspects of the subject that could reasonably be expected, accurately and in sufficient detail.
60 - 69	2i	Generally well organised and well expressed answer which shows <b>good</b> understanding. Covers all, or almost all, major aspects of the subject accurately and in sufficient detail.
50-59	2ii	Broadly accurate answer covering most of the major aspects of the subject. Lacks some details or contains some errors or is not sufficiently well constructed or argued for a 2i.
40-49	3 <sup>rd</sup>	Incomplete coverage of the subject. Important errors or omissions, or poor presentation.
35-39	Borderline fail	Very limited answer. Small amount of correct relevant material presented adequately, or more relevant points but presented poorly.

21-34	Fail	Very poor attempt to answer the question, or insufficient correct material, or very poor expression of material. The higher marks in the range should reflect either more relevant points or better presentation.
0-20	Fail	No, or almost no, relevant material. If no answer or totally irrelevant, give 0; if one or two points related in any way to the question, give up to 10; if one or two relevant points, give 10-20.

### 3.1.2 Late submission of in-course work (without prior agreed special arrangement)

- a. For written assignments, students who fail to submit coursework assessments by the submission deadline without an agreed extension will incur the following penalties:
  - Work submitted within one day of the original submission deadline will be accepted for marking but the marks awarded will be capped at 40%.
  - Work submitted after the one day period without an agreed extension, or students who do not submit any work will receive a mark of 0 for that attempt.
- b. For research project reports submitted late, 5% of the total marks available will be deducted for each day (or part of 24 hours) that the deadline is exceeded up to a maximum of 25% per week; there is no limit to this penalty and the mark remaining may reach zero. This deduction will normally be carried out by the Chair of the Board at the time of final assembly of marks.
- c. Where a penalty has been applied to an assessment mark due to late submission or non-submission, the calculation of the final overall year mark will use these adjusted marks.
- d. Where satisfactory completion of the skills portfolio is a requirement for entry into examinations, failure to do this by the deadline will result in deferral of entry for the student to the next available examination period.

### 3.1.3 Objectivity

- For written work submitted for in-course assessment and examinations candidates shall be given a candidate number for anonymity during marking
- Written work where an objective scheme for the award of marks is pre-determined (e.g. short answer questions) shall be marked by one internal examiner or assessor
- Other written assessments shall be marked in detail by one internal examiner or assessor, with a second internal examiner or assessor having at least an overview of the work
- The research project dissertation and research project presentations should be double marked independently.
- Where the two marks for a candidate diverge significantly, the two examiners will discuss and agree a mark. Where agreement between the two examiners cannot be reached, this shall be referred to the Chief Examiner who shall allocate the final mark.
- Assessments will be marked on a percentage scale with the exception of the skills portfolio

### 3.2. Instructions to Module Examiners

When the marks for all components of the assessments for each course module are available, the internal examiner concerned should aggregate them, using the weighting for each component already approved by the School and University if relevant and shown on each mark sheet. All marks for all components should be on the above scale and calculations throughout should be rounded up (>0.5) or down (<0.5) to the nearest whole number. Completed marksheets should then be sent to the Chair of the Board of Examiners.

### 3.3 Instructions to Board of Examiners

#### 3.3.1 Progression (see table 1)

Year 1 students must pass EVERY module at 40 % (in course assessment contributes 50% and end of year examinations contribute 50% to module marks) to progress to year 2.

- For each module, students must achieve at least 35% in both the in-course assessment and the end of year exam

Year 2 students must pass each module at 40% (in course assessment contributes 50% and end of year examinations contribute 50% to module marks) and complete year 2 portfolio requirements to progress to year 3.

- For each module, students must achieve at least 35% in both the in-course assessment and the end of year exam

#### Overall class of Honours

To be awarded the Degree, a candidate must achieve a final weighted average mark of 40 or more from modules totalling 120 credits, all at the final year honours degree level.

Final Weighted Average	Class of Honours
70-100	1st
60-69	2i
50-59	2ii
40-49	3rd
0-39	Fail

Candidates shall normally stay in the class indicated by their final weighted average. They can only be moved up if they fall into the borderline category defined below.

#### Definition of borderline category:

### Criteria for automatic promotion of degree classification

Students who achieve BOTH of the following two requirements will automatically be promoted to the next highest degree classification. Students will be identified by the Chair of the Board of Examiners and approved by the exam board.

Boundary	Final Weighted Average	Final Year modules totalling at least 60 credits with the following marks:
1st/2i	69	≥ 69
2i/2ii	59	≥ 59
2ii/3rd	49	≥ 49

### Degree title

The degree title is BSc (Hons) Clinical Pharmacology

### 3.3.2 Reassessment

- 4 A student will, as of right, be permitted one re-entry/resubmission for all failed examinations or assessment components.

Year 1 and 2 examinations

- A student who fails to achieve the pass mark of 40% for a module will be required to take a resit examination for that module involving single best answer and short answer questions. Students who fail more than one module will be required to resit examinations in all modules failed, which may be combined in one or more sittings depending on the number of modules failed. There is not a separate resit for in-course and examinations. The mark for any module following the resit assignment will be capped at 40%.

Resit examinations will be scheduled after semester 2 for year 1 students and after semester 4 for year 2 students.

A year ONE student who defers an exam

A student who fails at re-assessment(s) will be eligible to be considered for a discretionary third and final attempt at failed assessments, in accordance with the *Procedure for consideration for a final discretionary attempt at an assessment*, as approved by Senate. Under this procedure, Boards of Examiners will have the authority to approve a discretionary third attempt if a candidate meets programme-specific fast-track criteria. For candidates who do not satisfy the programme-specific fast-track criteria, a Discretionary Panel of Senate will consider the student's application for a discretionary third attempt

- 4.4 To be considered for a discretionary, third attempt at Year 1 or Year 2 assessments by the fast-track process, the student must satisfy BOTH criteria shown below:

- The student must achieve an overall mark of more than 35 % in the failed module(s).
- The failed module(s) must not total more than 30 credits.

The offer of a discretionary, third attempt at an assessment by the fast-track process shall be conditional upon evidence of engagement by the student. Specifically, the student must confirm acceptance of the offer (in writing) within 5 working days of notification.

A student granted a third and final attempt may be required to repeat that Year, or part thereof, in order to re-take the failed assessments.

### **3.3.3 Alternative exit awards**

Students who are unsuccessful in achieving the BSc Honours degree may be eligible for an alternative exit award. These awards shall only be given to students who cease to be registered on the BSc Hons Clinical Pharmacology programme (that is to say, it is an exit qualification, not a qualification that students will obtain en-route to the BSc (Hons) Clinical Pharmacology award).

Students who have successfully completed Year One of the BSc (Hons) Clinical Pharmacology programme shall be eligible for the SGUL award of Undergraduate Certificate in Clinical Pharmacology.

4.3 Students who have successfully completed Years One and Two of the BSc (Hons) Clinical Pharmacology programme shall be eligible for the SGUL award of Undergraduate Diploma in Clinical Pharmacology.

## **7. Reporting of Results**

7.1 Provisional in-course assessment marks will be issued throughout the academic year. Candidates will be given formal notice of their confirmed assessment marks and end of year mark within 4 weeks of the Board of Examiners meeting.