

# Phyto-pharmaceutical Science

<b>Final award</b>	MSc
<b>Intermediate awards available</b>	<i>PGCert, PGDip</i>
<b>UCAS code</b>	N/A
<b>Details of professional body accreditation</b>	N/A
<b>Relevant QAA Benchmark statements</b>	
<b>Date specification last up-dated</b>	June 2015

## Programme content

The MSc in Phyto-pharmaceuticals (the development and use of plant medicines) offers an unique opportunity to develop knowledge and skills in this new emerging area of natural product science including the necessary skills to undertake individual and collaborative research.

This modular programme aims to produce postgraduate students with a sound critical knowledge of the therapeutic role of medical treatments derived from traditional medicine sources. Special emphasis is placed on phyto-pharmaceutical research, product development and the quality control of natural plant materials.

## Phyto-pharmaceuticals at UEL

- This programme develops a critical understanding of the diverse use of plants and their place in human culture.
- This programme helps students to understand the role of ‘phytotherapy’ in modern medicine with respect to the different body organs and systems
- Students on this programme will learn and use a wide range of techniques for the quality control of natural plant material including both the macroscopical and microscopical recognition of dried plant material.
- This programme teaches students a wide range of methods used in phyto-pharmaceutical analysis
- This programme enables students to understand the important stages in drug development from discovery to clinical use
- This programme will teach students to assess the potential of a phytotherapeutic agent in accordance with existing laws and legislation and within the framework of ethical principals
- Field trips and visits to herbal suppliers and manufacturers are an integral part of the programme
- The programme is supported by excellent facilities including refurbished laboratories with the latest analytical equipment and medicinal herb garden
- Guest lecturers from the professional working environment are invited to present specialist, subject-related material to broaden the student experience
- Practical training and transferable and research skills are a fundamental part of the MSc and PGD programme
- This programme encourages team work and multidisciplinary working

## **Entry requirements**

For entry to this programme, students are required to have a minimum of a second class undergraduate honours degree from a UK university (or equivalent) in a relevant subject area e.g. Pharmacology, Pharmacy, Chemistry, Toxicology, Herbal Medicine or an equivalent qualification and/or experience. For overseas students there is a requirement for an IELTS score of 6.5 or higher a minimum of 6.0 in all components. Applicants whose qualifications do not conform to these criteria may be admitted to the programme at the admission tutors discretion, only if they are likely to be successful in gaining an award. International qualifications will be checked for appropriate matriculation to UK Higher Education postgraduate programmes.

At UEL we are committed to working together to build a learning community founded on equality of opportunity - a learning community which celebrates the rich diversity of our student and staff populations. Discriminatory behaviour has no place in our community and will not be tolerated. Within a spirit of respecting difference, our equality and diversity policies promise fair treatment and equality of opportunity for all. In pursuing this aim, we want people applying for a place at UEL to feel valued and know that the process and experience will be transparent and fair and no one will be refused access on the grounds of any protected characteristic stated in the Equality Act 2010

## **Programme structure**

- One year full time or two years part time for MSc and PG Diploma.
- One year part time for PG Certificate.
- Part-time MSc students study Phytopharmaceutics in semester A and Drug Design semester B of the first year. These are followed by Pharmaceutical Analysis in semester A of year 2 and Research Methods in semester B. The project would be taken in the summer period.
  - Taught modules are delivered in a semesterised system, with semesters running from September to January and February to June. The research projects will run through the summer period

## **Learning environment**

- Learning is encouraged through participation in a wide variety of activities including lectures, seminars, workshops, laboratory-based practicals, external visits and web-based learning etc.
- In addition all students are expected to read extensively in their own time. Much of this reading will be directed.
- Success at university depends on developing your ability to study independently using library resources, Computer-assisted learning (CAL), handouts and web-based study activities.
- These skills are reinforced in modules in the first semester. These enable us to assess your independent learning needs at university, and also help to develop those transferable skills so important in working life. The skills with which you start the programme may vary considerably between individuals, so your personal tutor will direct your skills development work on an individual basis.

## **Assessment**

- Students are assessed in practical work and theory.
- In taught modules 40% or 50% of the module mark is derived from coursework during the semester (this can take a variety of forms including laboratory work, data analysis, essays, oral presentations etc.) and the remaining 50% or 60% from written theory examinations at the end of the semester.
- The Research Skills module is assessed by coursework involving a variety of forms of presentation.
- The Research Project is assessed mainly by the final written report, with contributions from a poster presentation and portfolio.
- The pass mark for all modules is 50%

## **Relevance to work/profession**

- The curriculum is tailored to research and to providing you with the expertise to work in the pharmaceutical industries rapidly developing area of phyto-pharmaceuticals
- Emphasis is placed on the development of skills as well as academic knowledge.
- Part-time students in relevant employment may be permitted to carry out research projects at their place of work.

## **Dissertation/project work**

- Project work is an essential component of a Masters degree programme and one that most students enjoy. Small projects and group work exercises feature throughout the programme.
- The individual research project is the culmination of the programme makes up 33% of the programme.
- Project work encourages students to show initiative in their individual work under supervision, using appropriate analytical techniques to generate and interpret new data.
- Dissertation preparation develops literature researching, presentation and written communication skills essential in professional life.

## **Added value**

- Study in excellent facilities, including new refurbished laboratories and medicinal herb garden
- Be supported throughout your studies by our experienced, dedicated team of staff
- Sound practical as well as academic training
- Effective careers advice and guidance available.

## **Your future career**

As an expert in phyto-pharmaceuticals you will have a wide range of career options available to you in particular research orientated jobs in the pharmaceutical and healthcare industry. With the introduction of legislation controlling the production and sale of herbal products it will also enable you to consider careers in a government agency such as the MHRA after further training. By learning a wide range of pharmacognosy skills and methods used in phyto-pharmaceutical analysis graduates will be able to apply for a wide range of jobs in the

development, manufacture and marketing of herbal supplements and phytomedicines. A fundamental understanding of the therapeutic use of herbs could also lead the way to opportunities in journalism and publishing. With phyto-pharmaceuticals of particular interest in developing countries such as India the programme will be of interest to both domestic and international students. This degree can also be enjoyed by those students not necessarily looking for a career but have an interest in plants and find benefit from scientific study at this advanced level.

### **How we support you**

The School of Health and Bioscience provides immediate contact with University support systems.

- When you arrive, you will be allocated a Personal Tutor (a member of staff familiar with your degree). You will see your Tutor at regular intervals to discuss progress and life in general. Your tutor will be responsible for directing your skills development work, by directing you to courses which will tackle any areas in which your academic background may be deficient.
- The programme tutor may also give support on academic matters, and advice about other specialist help available through the University.
- The School also has a Help Desk to provide administrative assistance and advise how to get the right help.
- Internet homepages are used by many staff to support their teaching and your learning.
- Lecture and practical files, quizzes, mark summaries and much more is now available for several modules via UELplus online links

Throughout the programme you will find a number of scheduled support activities devoted to specific aspects e.g. how to write your project report, or more general aspects such as careers. Support for students on a University level includes:

- [Libraries and Learning Resource Centres](#)
- [Careers advice and information](#)
- Counselling and Advice for practical problems
- Childcare for students with children aged 2½ yrs to 5 yrs
- [Health Centre with a nurse regularly on duty.](#)
- [Language tuition](#)
- [Dyslexia support](#)
- [Accommodation](#)

### **Bonus factors**

- A small and friendly campus.
- A School with staff and facilities to match to the wide interests and backgrounds of students.
- Good connections with employers.
- Close proximity to the Olympic Park
- Excellent Sports facilities at Sportsdock at the Docklands campus

- Multiplex cinema, theatre, supermarkets, high street shops, restaurants, cafes and pubs a few minutes walk away in Stratford - a major site of new development in East London.
- Central London only 20 minutes away by underground, and [extensive transport links](#) with all parts of London.

## **Programme aims and learning outcomes**

### **What is this programme designed to achieve?**

This programme is designed to give you the opportunity to:

- To enable students to achieve advanced knowledge in the science of phyto-pharmaceuticals
- To help students perform research that meets peer review standards and encourages more advanced knowledge in the field of phytomedicine,
- To assist students to develop strong presentation and communication skills,
- To equip students with the knowledge and skills to become professionals in the field of phyto-pharmaceuticals

### **What will you learn?**

#### **Knowledge**

- A sound understanding of the role of phyto-pharmaceuticals in modern medicine
- Detailed knowledge of the latest analytical methods used in the qualitative and quantitative analysis of raw material and pharmaceutical products
- The principals of drug design including the relationship between molecular structure and pharmacological activity of various representative classes of phytochemicals
- An appreciation of the diverse uses of plants and their place in human cultures
- An understanding of current legislation and regulation in the production and licensing of phyto-pharmaceutical products

#### **Thinking skills**

- To critically evaluate and discuss issues of current interest in the field of phytomedicine
- An awareness and understanding of the need for more advanced knowledge and new approaches to research and development in this new emerging area of plant research
- The ability to display critical thinking, problem solving and decision making abilities in a variety of theoretical and practical situations
- The ability to select and utilise appropriate methods of data analysis and recognise their strengths and limitations

#### **Subject-Based Practical skills**

- The ability to select and apply appropriate methods to assess the quality of natural plant materials
- To communicate effectively with a wide range of audiences using a variety of methods including written, poster, oral and web-based presentations

- The ability to set realistic aims in research work and manage time and resources effectively
- The skills to design and develop a high quality dissertation and present it in a suitable form

### **Skills for life and work (general skills)**

- To maximise your potential for independent life-long learning
- Proficiently use a range of IT software
- To effectively augment your knowledge and understanding and develop new skills to a high level
- To work collaboratively as a member of a multi-disciplinary team and be capable of managing a study

### **The programme structure**

#### **Introduction**

All programmes are credit-rated to help you to understand the amount and level of study that is needed.

One credit is equal to 10 hours of directed study time (this includes everything you do e.g. lecture, seminar and private study).

Credits are assigned to one of 5 levels:

- 3 equivalent in standard to GCE 'A' level and is intended to prepare students for year one of an undergraduate degree programme
- 4 equivalent in standard to the first year of a full-time undergraduate degree programme
- 5 equivalent in standard to the second year of a full-time undergraduate degree programme
- 6 equivalent in standard to the third year of a full-time undergraduate degree programme
- 7 equivalent in standard to a Masters degree

#### **Credit rating**

The overall credit-rating of this programme is 180 for Masters (MSc), 120 for a Postgraduate Diploma (PGDip) and 60 for a postgraduate certificate (PGCert).

#### **Typical duration**

The typical duration of this programme is one year full-time or two years part-time. It is possible to move from full-time to part-time study and vice-versa to accommodate any external factors such as financial constraints or domestic commitments. Many of our students make use of this flexibility and this may impact on the overall duration of their study period.

## **How the teaching year is divided**

The teaching year is divided into two semesters of roughly equal length. A typical student registered in a full-time attendance mode will study two 30 credit modules per semester and a typical student registered in a part-time attendance mode will study one or two modules per semester. Teaching and assessment of taught modules is completed within each semester. The advanced independent research module is completed during the summer period, between June and September.

For part-time students, attendance is required on one full-day per week, for full-time students attendance is usually three days but this may be increased during the research project.

A typical student registered in a full-time attendance mode will study the equivalent of 120 credits over the year. A typical student registered in a part-time attendance mode will study for one day and will complete 60 credits.

## **What you will study when**

Full time Postgraduate Diploma students will take Phyto-pharmaceutics and Pharmaceutical Analysis in semester A followed by Drug Design and Research Methods in semester B. Students can start this programme in full time or part time mode.

Postgraduate Certificate students take the programme by part time day release, taking only the Phyto-pharmaceutics in semester A and Drug Design in semester B. The modules which make up the programme are listed below.

<b>Level</b>	<b>UEL Module Code</b>	<b>Module Title</b>	<b>Credit</b>	<b>Status</b>
M	<b>BS 7033</b>	<b>Phyto-pharmaceutics</b>	<b>30</b>	<b>Core</b>
M	<b>BS7027</b>	<b>Pharmaceutical Analysis</b>	<b>30</b>	<b>Core</b>
M	<b>BS7002</b>	<b>Research Skills</b>	<b>30</b>	<b>Core</b>
M	<b>BS7032</b>	<b>Drug Design</b>	<b>30</b>	<b>Core</b>
M	<b>BS7003</b>	<b>Research Project</b>	<b>60</b>	<b>Core</b>

## **Requirements for gaining an award**

In order to gain a Postgraduate Certificate, you will need to obtain 60 credits at Level 7.

In order to gain a Postgraduate Diploma, you will need to obtain 120 credits at Level 7

In order to obtain a Masters, you will need to obtain 180 credits at

Level 7. These credits will include a 60 credit level M core module of advanced independent research.

## **Masters Award Classification**

Where a student is eligible for an Masters award then the award classification is determined by calculating the arithmetic mean of all marks and applying the mark obtained as a percentage, with all decimals points rounded up to the nearest whole number, to the following classification

70% - 100%	Distinction
60% - 69%	Merit
50% - 59%	Pass
0% - 49%	Not passed

## **Further information**

### **Teaching, learning and assessment**

#### **Teaching and learning**

Knowledge is developed through

- Lectures
- Tutorials, seminars and workshops
- External visits
- Practicals
- Student centred learning – directed reading, literature searches and assignment preparation

Thinking skills are developed through

- Tutorials, seminars and workshops
- Oral presentations and group discussions
- Report writing and assignments
- Project work
- Independent reading
- Computer aided learning

Practical skills are developed through

- Laboratory practical and/or field work
- Data analysis exercises
- Use of IT and library based resources
- Student presentations
- Individual research project

Skills for life and work (general skills) are developed through

- Student centred learning
- Seminar, tutorial and workshop discussions
- Presenting ideas and arguments in a structured way – written and oral communication

- Time management
- Collaborative team work and multidisciplinary approach to problem solving
- Oral and written presentation

**Assessment:** A wide variety of assessment methods are used including:

Written examinations

Practical assessments

Essays

Data analysis

Database searches

Oral presentations (use of powerpoint)

Portfolios

Poster presentation

Critiquing/reviewing research papers

Research proposal and project

Knowledge and Thinking Skills are assessed by

- Evidence of reading and comprehension of the topics covered in the module being assessed. This will be particularly apparent in essay work, examinations and practicals.
- Ability to describe, explain and discuss various aspects of the programme material in the context of group tutorials, seminars, presentations and other pieces of assessed coursework for the module.
- The ability to integrate the knowledge presented separately in any module to develop hypothesis and construct arguments and comparisons, as required to address the specific assessments in each module.
- Critical review of practical exercises
- Data Interpretation exercises
- The ability to use subject knowledge in setting a piece of practical research work in its scientific context and to present the results obtained in a logical and coherent manner.

Practical skills are assessed by

- The ability to carry out laboratory practical work effectively, within the timeframe allocated.
- The ability to interpret and report on work carried out in the laboratory as evidenced by laboratory notebook entries, practical reports and project dissertation.
- The ability to complete assignments using appropriate resources such as IT and library facilities.

- Evidence of logical planning and management of time in the preparation of materials for assessment.
- Demonstrating the ability to work in accordance with existing laws and regulations and within the framework of ethical and deontological principals

Skills for life and work (general skills) are assessed by

- The ability to work to strict deadlines
- The ability to select and utilise appropriate problem solving skills
- Demonstration of effective oral and written communication skills
- Evidence of interpersonal skills such as teamwork and /or team leadership
- Evidence of general numeracy skills
- Evidence of a critical yet constructive, evaluative approach in the presentation of written material

## **How we assure the quality of this programme**

### **Before this programme started**

Before this programme started, the following was checked:

- there would be enough qualified staff to teach the programme;
- adequate resources would be in place;
- the overall aims and objectives were appropriate;
- the content of the programme met national benchmark requirements;
- the programme met any professional/statutory body requirements;
- the proposal met other internal quality criteria covering a range of issues such as admissions policy, teaching, learning and assessment strategy and student support mechanisms.

This is done through a process of programme approval which involves consulting academic experts including some subject specialists from other institutions.

### **How we monitor the quality of this programme**

The quality of this programme is monitored each year through evaluating:

- external examiner reports (considering quality and standards);
- statistical information (considering issues such as the pass rate);
- student feedback.

Drawing on this and other information, programme teams undertake the annual Review and Enhancement Process which is co-ordinated at School level and includes student participation. The process is monitored by the Quality and Standards Committee.

Once every six years an in-depth review of the whole field is undertaken by a panel that includes at least two external subject specialists. The panel considers documents, looks at student work, speaks to current and former students and speaks to staff before drawing its conclusions. The result is a report highlighting good practice and identifying areas where action is needed.

## **The role of the programme committee**

This programme has a programme committee comprising all relevant teaching staff, student representatives and others who make a contribution towards the effective operation of the programme (e.g. library/technician staff). The committee has responsibilities for the quality of the programme. It provides input into the operation of the Review and Enhancement Process and proposes changes to improve quality. The programme committee plays a critical role in the quality assurance procedures.

## **The role of external examiners**

The standard of this programme is monitored by at least one external examiner. External examiners have two primary responsibilities:

- To ensure the standard of the programme;
- To ensure that justice is done to individual students.

External examiners fulfil these responsibilities in a variety of ways including:

- Approving exam papers/assignments;
- Attending assessment boards;
- Reviewing samples of student work and moderating marks;
- Ensuring that regulations are followed;
- Providing feedback through an annual report that enables us to make improvements for the future.

## **Listening to the views of students**

The following methods for gaining student feedback are used on this programme:

- Module evaluation questionnaires
- Student representation on programme committees (meeting 2 times a year)
- Individual feedback to personal tutor, module leaders and programme leader

Students are notified of the action taken through:

- Circulating the minutes of the programme committee and the annual review and enhancement process report
- Providing details on the programme noticeboard/site on UELPlus or by e-mail
- Oral feedback to students

## **Listening to the views of others**

The following methods are used for gaining the views of other interested parties:

- Feedback from former students
- Liaison with colleagues from other Institutions
- Liaison with professional associations and research institutions
- Discussions with potential employers

## **Where you can find further information**

Further information about this programme is available from:

- The UEL web site (<http://www.uel.ac.uk>)
- The student handbook
- Module study guides
- UEL Manual of General Regulations <http://www.uel.ac.uk/qa/>
- UEL Quality Manual <http://www.uel.ac.uk/qa/>
- Regulations for the Academic Framework <http://www.uel.ac.uk/academicframework/>
- School web pages <http://www.uel.ac.uk/hsb/>