

MBChB

Curriculum Guide For Phase 1 of The Degrees Of Bachelor Of Medicine And Bachelor Of Surgery

2016 Intake

Introduction

This course document is the first of two documents describing the 5-year medical curriculum at Leicester Medical School. It covers Phase 1, the first two years. You will receive the second document detailing the phases of your programmes that entails full time clinical education just before you begin that part of the course. When you have read and understood the course document you will appreciate what is expected of you as an adult learner embarking upon your career in medicine and what the Medical School will provide to help you learn. You will have to take control of your own learning. We will set out your learning outcomes as clearly as we can and provide some of the resources you will need to achieve them. Ultimately, however, it is up to you to combine your own experiences, skills and effort with the opportunities we offer in order to meet the course requirements and qualify as a knowledgeable, caring and competent doctor.

The following sections first, specify the overall curriculum outcomes which you are aiming to fulfil over the next five years. Second, we define for you the curriculum philosophy and how you are expected to work and develop. Third, we describe the structure of the Phase I curriculum showing how it is organised.

Aims and outcomes

Aim

The broad aim of Leicester Medical School is that new graduates should have the clinical competence to work as Foundation Doctors combined with the potential to develop along the continuum of medical education into humane and rational doctors. In accordance with the General Medical Council document Good Medical Practice¹, graduates will make the care of patients their first concern, applying their knowledge and skills in a competent and ethical manner and using their ability to provide leadership and to analyse complex and uncertain situations.

The high level aim of the programme is to ensure that graduates are

- Prepared for work as a Foundation Year 1 Doctor
- Adequately prepared to work as generalists, in order to match the likely trend for increasing service requirements for doctors with a broad training

This will be achieved by increasing the apprenticeship training model of delivery and Increasing exposure to high quality General Practice education and training from outset of the programme.

¹ http://www.gmc-uk.org/guidance/good_medical_practice.asp

Outcomes

The General Medical Council defines the outcomes ² which all graduating medical students should meet. Therefore the MBChB programme at Leicester Medical School is benchmarked against these outcomes and your learning and teaching must allow you to demonstrate these in full at the point of graduation.

Blueprinting

Some of the Outcomes for Graduates represent over-arching and comprehensively encompassing themes, notably those under the heading of Outcomes 2 “The Doctor as a Practitioner”. Therefore each of the Phase 1 curriculum units can be mapped to outcomes 21 a – 3 and 23 f. Where specific Outcomes are referenced in the blueprint for each Phase 1 Unit, this does should not be taken as indication that you will have met in full that outcome on completion of Phase 1. Rather, your learning will be measured over the course of the programme and the extent to which your development in each of these Outcomes has progressed will vary considerably in Phase 1.

Overarching outcome for graduates

7. Medical students are tomorrow’s doctors. In accordance with Good Medical Practice, graduates will make the care of patients their first concern, applying their knowledge and skills in a competent and ethical manner and using their ability to provide leadership and to analyse complex and uncertain situations.

The doctor as a scholar and a scientist

8. The graduate will be able to apply to medical practice biomedical scientific principles, method and knowledge relating to: anatomy, biochemistry, cell biology, genetics, immunology, microbiology, molecular biology, nutrition, pathology, pharmacology and physiology. The graduate will be able to:

- a. Explain normal human structure and functions.
- b. Explain the scientific bases for common disease presentations.
- c. Justify the selection of appropriate investigations for common clinical cases.
- d. Explain the fundamental principles underlying such investigative techniques.
- e. Select appropriate forms of management for common diseases, and ways of preventing common diseases, and explain their modes of action and their risks from first principles.
- f. Demonstrate knowledge of drug actions: therapeutics and pharmacokinetics; drug side effects and interactions, including for multiple treatments, long-term conditions and non-prescribed medication; and also including effects on the population, such as the spread of antibiotic resistance.
- g. Make accurate observations of clinical phenomena and appropriate critical analysis of clinical data.

² http://www.gmc-uk.org/education/undergraduate/undergrad_outcomes.asp

9. Apply psychological principles, method and knowledge to medical practice.

- a. Explain normal human behaviour at an individual level.
- b. Discuss psychological concepts of health, illness and disease.
- c. Apply theoretical frameworks of psychology to explain the varied responses of individuals, groups and societies to disease.
- d. Explain psychological factors that contribute to illness, the course of the disease and the success of treatment.
- e. Discuss psychological aspects of behavioural change and treatment compliance.
- f. Discuss adaptation to major life changes, such as bereavement. Compare and contrast the abnormal adjustments that might occur in these situations.
- g. Identify appropriate strategies for managing patients with dependence issues and other demonstrations of self-harm.

10. Apply social science principles, method and knowledge to medical practice.

- a. Explain normal human behaviour at a societal level.
- b. Discuss sociological concepts of health, illness and disease.
- c. Apply theoretical frameworks of sociology to explain the varied responses of individuals, groups and societies to disease.
- d. Explain sociological factors that contribute to illness, the course of the disease and the success of treatment including issues relating to health inequalities, the links between occupation and health and the effects of poverty and affluence.
- e. Discuss sociological aspects of behavioural change and treatment compliance.

11. Apply to medical practice the principles, method and knowledge of population health and the improvement of health and health care.

- a. Discuss basic principles of health improvement, including the wider determinants of health, health inequalities, health risks and disease surveillance.
- b. Assess how health behaviours and outcomes are affected by the diversity of the patient population.
- c. Describe measurement methods relevant to the improvement of clinical effectiveness and care.
- d. Discuss the principles underlying the development of health and health service policy, including issues relating to health economics and equity, and clinical guidelines.
- e. Explain and apply the basic principles of communicable disease control in hospital and community settings.
- f. Evaluate and apply epidemiological data in managing healthcare for the individual and the community.
- g. Recognise the role of environmental and occupational hazards in ill-health and discuss ways to mitigate their effects.
- h. Discuss the role of nutrition in health.
- i. Discuss the principles and application of primary, secondary and tertiary prevention of disease.
- j. Discuss from a global perspective the determinants of health and disease and variations in health care delivery and medical practice.

12. Apply scientific method and approaches to medical research.

- a. Critically appraise the results of relevant diagnostic, prognostic and treatment trials and other qualitative and quantitative studies as reported in the medical and scientific literature.
- b. Formulate simple relevant research questions in biomedical science, psychosocial science or population science, and design appropriate studies or experiments to address the questions.
- c. Apply findings from the literature to answer questions raised by specific clinical problems.
- d. Understand the ethical and governance issues involved in medical research.

The doctor as a practitioner

13. The graduate will be able to carry out a consultation with a patient:

- a. Take and record a patient's medical history, including family and social history, talking to relatives or other carers where appropriate.
- b. Elicit patients' questions, their understanding of their condition and treatment options, and their views, concerns, values and preferences.
- c. Perform a full physical examination.
- d. Perform a mental-state examination.
- e. Assess a patient's capacity to make a particular decision in accordance with legal requirements and the GMC's guidance (in Consent: Patients and doctors making decisions together).
- f. Determine the extent to which patients want to be involved in decision-making about their care and treatment.
- g. Provide explanation, advice, reassurance and support.

14. Diagnose and manage clinical presentations.

- a. Interpret findings from the history, physical examination and mental-state examination, appreciating the importance of clinical, psychological, spiritual, religious, social and cultural factors.
- b. Make an initial assessment of a patient's problems and a differential diagnosis. Understand the processes by which doctors make and test a differential diagnosis.
- c. Formulate a plan of investigation in partnership with the patient, obtaining informed consent as an essential part of this process.
- d. Interpret the results of investigations, including growth charts, x-rays and the results of the diagnostic procedures in Appendix 1.
- e. Synthesise a full assessment of the patient's problems and define the likely diagnosis or diagnoses.
- f. Make clinical judgements and decisions, based on the available evidence, in conjunction with colleagues and as appropriate for the graduate's level of training and experience. This may include situations of uncertainty.
- g. Formulate a plan for treatment, management and discharge, according to established principles and best evidence, in partnership with the patient, their carers, and other health professionals as appropriate. Respond to patients' concerns and preferences, obtain informed consent, and respect the rights of patients to reach decisions with their doctor about their treatment and care and to refuse or limit treatment.
- h. Support patients in caring for themselves.
- i. Identify the signs that suggest children or other vulnerable people may be suffering from abuse or neglect and know what action to take to safeguard their welfare.

j. Contribute to the care of patients and their families at the end of life, including management of symptoms, practical issues of law and certification, and effective communication and team working.

15. Communicate effectively with patients and colleagues in a medical context.

a. Communicate clearly, sensitively and effectively with patients, their relatives or other carers, and colleagues from the medical and other professions, by listening, sharing and responding.

b. Communicate clearly, sensitively and effectively with individuals and groups regardless of their age, social, cultural or ethnic backgrounds or their disabilities, including when English is not the patient's first language.

c. Communicate by spoken, written and electronic methods (including medical records), and be aware of other methods of communication used by patients. Appreciate the significance of non-verbal communication in the medical consultation.

d. Communicate appropriately in difficult circumstances, such as breaking bad news, and when discussing sensitive issues, such as alcohol consumption, smoking or obesity.

e. Communicate appropriately with difficult or violent patients.

f. Communicate appropriately with people with mental illness.

g. Communicate appropriately with vulnerable patients.

h. Communicate effectively in various roles, for example as patient advocate, teacher, manager or improvement leader.

16. Provide immediate care in medical emergencies.

a. Assess and recognise the severity of a clinical presentation and a need for immediate emergency care.

b. Diagnose and manage acute medical emergencies.

c. Provide basic first aid.

d. Provide immediate life support.

e. Provide cardio-pulmonary resuscitation or direct other team members to carry out resuscitation.

17. Prescribe drugs safely, effectively and economically.

a. Establish an accurate drug history, covering both prescribed and other medication.

b. Plan appropriate drug therapy for common indications, including pain and distress.

c. Provide a safe and legal prescription.

d. Calculate appropriate drug doses and record the outcome accurately.

e. Provide patients with appropriate information about their medicines.

f. Access reliable information about medicines.

g. Detect and report adverse drug reactions.

h. Demonstrate awareness that many patients use complementary and alternative therapies, and awareness of the existence and range of these therapies, why patients use them, and how this might affect other types of treatment that patients are receiving.

18. Carry out practical procedures safely and effectively.

- a. Be able to perform a range of diagnostic procedures, as listed in Appendix 1 and measure and record the findings.
- b. Be able to perform a range of therapeutic procedures, as listed in Appendix 1.
- c. Be able to demonstrate correct practice in general aspects of practical procedures, as listed in Appendix 1.

19. Use information effectively in a medical context.

- a. Keep accurate, legible and complete clinical records.
- b. Make effective use of computers and other information systems, including storing and retrieving information.
- c. Keep to the requirements of confidentiality and data protection legislation and codes of practice in all dealings with information.
- d. Access information sources and use the information in relation to patient care, health promotion, advice and information to patients, and research and education.
- e. Apply the principles, method and knowledge of health informatics to medical practice.

The doctor as a professional

20. The graduate will be able to behave according to ethical and legal principles. The graduate will be able to:

- a. Know about and keep to the GMC's ethical guidance and standards including Good medical practice, the 'Duties of a doctor registered with the GMC' and supplementary ethical guidance which describe what is expected of all doctors registered with the GMC.
- b. Demonstrate awareness of the clinical responsibilities and role of the doctor, making the care of the patient the first concern. Recognise the principles of patient-centred care, including self-care, and deal with patients' healthcare needs in consultation with them and, where appropriate, their relatives or carers.
- c. Be polite, considerate, trustworthy and honest, act with integrity, maintain confidentiality, respect patients' dignity and privacy, and understand the importance of appropriate consent.
- d. Respect all patients, colleagues and others regardless of their age, colour, culture, disability, ethnic or national origin, gender, lifestyle, marital or parental status, race, religion or beliefs, sex, sexual orientation, or social or economic status. Respect patients' right to hold religious or other beliefs, and take these into account when relevant to treatment options.
- e. Recognise the rights and the equal value of all people and how opportunities for some people may be restricted by others' perceptions.
- f. Understand and accept the legal, moral and ethical responsibilities involved in protecting and promoting the health of individual patients, their dependants and the public including vulnerable groups such as children, older people, people with learning disabilities and people with mental illnesses.
- g. Demonstrate knowledge of laws, and systems of professional regulation through the GMC and others, relevant to medical practice, including the ability to complete relevant certificates and legal documents and liaise with the coroner or procurator fiscal where appropriate.

21. Reflect, learn and teach others.

a. Acquire, assess, apply and integrate new knowledge, learn to adapt to changing circumstances and ensure that patients receive the highest level of professional care.

b. Establish the foundations for lifelong learning and continuing professional development, including a professional development portfolio containing reflections, achievements and learning needs.

c. Continually and systematically reflect on practice and, whenever necessary, translate that reflection into action, using improvement techniques and audit appropriately for example, by critically appraising the prescribing of others.

d. Manage time and prioritise tasks, and work autonomously when necessary and appropriate.

e. Recognise own personal and professional limits and seek help from colleagues and supervisors when necessary.

f. Function effectively as a mentor and teacher including contributing to the appraisal, assessment and review of colleagues, giving effective feedback, and taking advantage of opportunities to develop these skills.

22. Learn and work effectively within a multi-professional team.

a. Understand and respect the roles and expertise of health and social care professionals in the context of working and learning as a multi-professional team.

b. Understand the contribution that effective interdisciplinary teamwork makes to the delivery of safe and high quality care.

c. Work with colleagues in ways that best serve the interests of patients, passing on information and handing over care, demonstrating flexibility, adaptability and a problem-solving approach.

d. Demonstrate ability to build team capacity and positive working relationships and undertake various team roles including leadership and the ability to accept leadership by others.

23. Protect patients and improve care.

a. Place patients' needs and safety at the centre of the care process.

b. Deal effectively with uncertainty and change.

c. Understand the framework in which medicine is practised in the UK, including: the organisation, management and regulation of healthcare provision; the structures, functions and priorities of the NHS; and the roles of, and relationships between, the agencies and services involved in protecting and promoting individual and population health.

d. Promote, monitor and maintain health and safety in the clinical setting, understanding how errors can happen in practice, applying the principles of quality assurance, clinical governance and risk management to medical practice, and understanding responsibilities within the current systems for raising concerns about safety and quality.

e. Understand and have experience of the principles and methods of improvement, including audit, adverse incident reporting and quality improvement, and how to use the results of audit to improve practice.

f. Respond constructively to the outcomes of appraisals, performance reviews and assessments.

g. Demonstrate awareness of the role of doctors as managers, including seeking ways to continually improve the use and prioritisation of resources.

h. Understand the importance of, and the need to keep to, measures to prevent the spread of infection, and apply the principles of infection prevention and control.

i. Recognise own personal health needs, consult and follow the advice of a suitably qualified professional, and protect patients from any risk posed by own health.

j. Recognise the duty to take action if a colleague's health, performance or conduct is putting patients at risk.

Practical procedures for graduates

Diagnostic procedures

1. Measuring body temperature. - Using an appropriate recording device
2. Measuring pulse rate and blood pressure. - Using manual techniques and automatic electronic devices
3. Trans-cutaneous monitoring of oxygen saturation. - Applying and taking readings from an electronic device which measures the amount of oxygen in a patient's blood
4. Venepuncture. - Inserting a needle into a patient's vein to take a sample of blood for testing or to give an injection into the vein.
5. Managing blood samples correctly. - Making d sure that blood samples are placed in the correct containers, and that these are labelled correctly and sent to the laboratory promptly and in the correct way. Taking measures to prevent spilling and contamination.
6. Taking blood cultures. - Taking samples of venous blood to test for the growth of infectious organisms in the blood. Requires special blood containers and laboratory procedures.
7. Measuring blood glucose. - Measuring the concentration of glucose in the patient's blood at the bedside, using appropriate equipment and interpreting the results.
8. Managing an electrocardiograph (ECG) monitor. - Setting up a continuous recording of the electrical activity of the heart. Ensuring the recorder is functioning correctly, and interpreting the tracing.
9. Performing and interpreting a 12-lead electrocardiograph. - Recording a full, detailed tracing of the electrical activity of the heart, using a (ECG) machine recorder (electrocardiograph). Interpreting the recording for signs of heart disease.
10. Basic respiratory function tests. - Carrying out basic tests to see how well the patient's lungs are working (for example, how much air they can breathe out in one second).
11. Urinalysis using Multistix. - Testing a sample of urine for abnormal contents, such as blood or protein. The urine is applied to a plastic strip with chemicals which change colour in response to specific abnormalities.
12. Advising patients on how to collect a mid-stream urine specimen. - Obtaining a sample of urine from a patient, usually to check for the presence of infection, using a method which reduces the risk of contamination by skin bacteria.
13. Taking nose, throat and skin swabs. - Using the correct technique to apply sterile swabs to the nose, throat and skin.
14. Nutritional assessment. - Making an assessment of the patient's state of nutrition. This includes an evaluation of their diet; their general physical condition; and measurement of height, weight and body mass index.
15. Pregnancy testing. - Performing a test of the urine to detect hormones which indicate that the patient is pregnant.

Therapeutic procedures

16. Administering oxygen. - Allowing the patient to breathe a higher concentration of oxygen than normal, via a face mask or other equipment.

17. Establishing peripheral intravenous access and setting up an infusion; use of infusion devices. - Puncturing a patient's vein in order to insert an indwelling plastic tube (known as a 'cannula'), to allow fluids to be infused into the vein (a 'drip'). Connecting the tube to a source of fluid. Appropriate choice of fluids and their doses. Correct use of electronic devices which drive and regulate the rate of fluid administration.
18. Making up drugs for parenteral administration. - Preparing medicines in a form suitable for injection into the patient's vein. May involve adding the drug to a volume of fluid to make up the correct concentration for injection.
19. Dosage and administration of insulin and use of sliding scales. - Calculating how many units of insulin a patient requires, what strength of insulin solution to use, and how it should be given (for example, into the skin, or into a vein). Use of a 'sliding scale' which links the number of units to the patient's blood glucose measurement at the time.
20. Subcutaneous and intramuscular injections. - Giving injections beneath the skin and into muscle.
21. Blood transfusion. - Following the correct procedures to give a transfusion of blood into the vein of a patient (including correct identification of the patient and checking blood groups). Observation for possible reactions to the transfusion, and actions if they occur.
22. Male and female urinary catheterisation. - Passing a tube into the urinary bladder to permit drainage of urine, in male and female patients.
23. Instructing patients in the use of devices for inhaled medication. - Providing instructions for patients about how to use inhalers correctly, for example, to treat asthma.
24. Use of local anaesthetics. - Using drugs which produce numbness and prevent pain, either applied directly to the skin or injected into skin or body tissues.
25. Skin suturing. - Repairing defects in the skin by inserting stitches (normally includes use of local anaesthetic).
26. Wound care and basic wound dressing. - Providing basic care of surgical or traumatic wounds and applying dressings appropriately.
27. Correct techniques for 'moving and handling' including patients. - Using, or directing other team members to use, approved methods for moving, lifting and handling people or objects, in the context of clinical care, using methods that avoid injury to patients, colleagues, or oneself.

General aspects of practical procedures

28. Giving information about the procedure, obtaining and recording consent, and ensuring appropriate aftercare. - Making sure that the patient is fully informed, agrees to the procedure being performed, and is cared for and watched appropriately after the procedure.
29. Hand washing (including surgical 'scrubbing up'). - Following approved processes for cleaning hands before procedures or surgical operations.
30. Use of personal protective equipment (gloves, gowns, masks). - Making correct use of equipment designed to prevent the spread of body fluids or cross-infection between the operator and the patient.
31. Infection control in relation to procedures. - Taking all steps necessary to prevent the spread of infection before, during or after a procedure.
32. Safe disposal of clinical waste, needles and other 'sharps'. - Ensuring that these materials are handled carefully and placed in a suitable container for disposal.

Curriculum philosophy

The Education Committee of the General Medical Council (GMC) is responsible for overseeing medical education in the UK and ensures that standards are maintained. In December 1993, the Education Committee produced a document entitled 'Tomorrow's Doctors' describing changes which must take place in medical education. Further recommendations were described in 'Tomorrow's Doctors' documents published in 2002 and in 2009. In 2016, the curriculum requirements of the GMC were published as "Outcomes for Graduates"³ and the standards against which Medical Schools are measured in the quality of their management and delivery of undergraduate programmes as "Promoting Excellence: standards for medical education and training"⁴. The five-year curriculum at Leicester was completely revised in 1994 to be fully consistent with the GMC recommendations, and has continually evolved since then as the recommendations have changed. It has been examined by the Education Committee of the General Medical Council who have approved its structure and approach, most recently in 2006. The MBChB programme at Leicester is subject to annual monitoring under the GMC Quality Assurance Framework⁵ and the next visit to the School by the GMC will be in Autumn 2016.

'Tomorrow's Doctors' sought to improve the student experience, and to encourage student-centred learning towards outcomes appropriate for the 21st century.

Phase 1 is the first stage towards achieving the outcomes specified for the curriculum. None will be achieved fully in Phase 1 alone, but some are substantially achieved, particularly those under the heading of 'the doctor as a scholar and scientist'. The aim is to lay a solid foundation upon which you may build by full-time clinical work in the latter Phases of your training. This foundation will include knowledge, skills and attitudes. In particular, we are concerned about attitudes to learning. You will not be able to practise effectively as a doctor unless you hone the skills of self-directed learning. By the end of the course you must be able to take a clinical problem, break it into its component parts, identify what you already understand, set yourself clear learning goals to acquire the understanding you still need and devise learning strategies to develop this understanding. Lifelong learning is the skill you need to be a true professional.

We recognise, however, that some of you may take longer than others to achieve this ideal, depending upon the learning styles that you have adopted before. The curriculum philosophy in Phase 1 is, therefore, "directed student learning" in which we aim to exemplify to you the processes you will have eventually to undertake for yourself with the benefit of the more detailed guidance from us. By the end of Phase 1 you should be ready for student-directed learning where you take much more control of the learning process.

Educational approach

- We will set you learning outcomes for each element of the curriculum.
- We will explain the key concepts and material in a small number of lectures.
- You will engage in supervised problem-solving tasks, working in groups to reinforce by active learning the concepts and materials. This learning will be supported by extensive written material - workbooks.
- We will aim to point out to you the clinical relevance of your learning. You should always seek to understand why you are learning material and how you will use it in the future.
- You will undertake self-directed learning to complete your understanding of the material
- We will assess your attainment of the outcomes frequently and provide feedback to aid your learning.

No one part of this process will enable you to succeed. The lectures and set tasks alone are not the curriculum. That is defined by the outcomes. You must play an active part in the group problem-solving and you must engage in a

³ http://www.gmc-uk.org/education/undergraduate/undergrad_outcomes.asp

⁴ <http://www.gmc-uk.org/education/standards.asp>

⁵ <http://www.gmc-uk.org/education/27080.asp>

significant amount of self-directed learning (additional reading, discussion) if you are to achieve the outcomes and demonstrate to us that you have done so in the assessments.

Throughout your working life you will need to reflect upon your career progression, upon your learning and skills in their broadest sense, and upon your own health and well-being. To help you to develop a proactive approach to these areas the Personal Support offered will regularly expose you to personal development planning, to career management and guidance, and to a consideration of your duties to your personal health and well-being as well as that of your peers.

Approach to learning and teaching for the MBChB at Leicester – Key Messages

- The ability to **self-regulate** is essential
 - support for development as self-regulated learners is embedded in the *choice of teaching approaches* used at Leicester
- The development of a sound **professional identity** is essential
 - support for the development of professional identity is embedded in the *design of key curriculum elements (e.g. VECE)* along with support for *reflective practice*
- The development of **independence in learning** is essential
 - support for development as independent learners is through a gradual shift from directed-student learning to *student-directed learning* as the programme proceeds
- The ability **synthesise knowledge** across a range of disciplines and experiences and use this to **formulate solutions** to clinical problems is essential
 - Support for this skill is through use of *context based teaching*, integrating clinical medicine from the outset and through use of *synoptic and cumulative* assessment
- Knowledge, skills and experience **build and develop over time** with the Phase 1 curriculum, which itself provides the foundation for full-time clinical training beginning in Year 3 of the programme
 - The *sequence* of units allows for coherent development of the knowledge base, the *CHDD* (early clinical apprenticeship) course runs across the Phase 1 curriculum integrating the increasing knowledge base with practical training in introductory clinical medicine, culminating in the *Integration for Clinical Application* unit in the latter half of year 2 allowing *recapitulation* of all elements of the curriculum
- Overall, a **professional approach** towards studies is essential
 - supported through clear expectations of *effective engagement* in all learning opportunities, openness towards and acceptance of *advice and feedback* and *honesty and probity* in all activities

Key requirements for learners on the Leicester MBChB

- ✓ Accept responsibility for own learning
- ✓ Manage uncertainty
- ✓ Solve problems
- ✓ Demonstrate understanding not recall of facts

Delivery Methods for Phase 1 Units

The emphasis for delivery of the Leicester MBChB is on **small group working** in order to encourage and promote **active learning**.

All Phase 1 units are designed to the same template which is that approximately 50% of contact time will be delivered as small group working.

The purpose of didactic teaching in the remainder of time allocated to each unit will be scene setting or framing the topic under consideration or context setting in the case of clinical lectures.

Some units, specifically the VECE and CHDD will be delivered predominantly through small group working.

Curriculum organisation

The curriculum organisation is administered as a series of curriculum components termed “units”. Phase 1 is divided into four semesters. Clinical work is introduced from the first semester as an increasing fraction of the curriculum until you begin full time clinical education in year 3. The unit structure has been chosen so that you may see how to divide your time. The medical course does not however work by 'credit accumulation', and you cannot pass or fail individual units, nor is it possible to re-take components selectively. All assessments cover the whole course up to the point of assessment. We have designed the curriculum so that each unit should require approximately the same amount of work. Clearly, however, your differing backgrounds and skills will mean that for some individuals, some units will be more demanding than others.

Each unit has a fixed allocation of teaching time. You will need to spend at least an equivalent amount of time on self-directed learning. The timetable is organised to allow you time for this purpose, and we provide a wide range of educational resources to help you, but it is up to you to organise your time and effort to achieve the outcomes of any particular unit. You will not be able to achieve a unit's outcomes just by attending the teaching sessions. You must undertake work on your own account.

Teamwork is a vital element of medical practice. Accordingly you will be working in groups during much of the scheduled teaching time. It is very important that you recognise the advantages of co-operative working with others, to share knowledge and skills and promote effective learning. We hope you will continue to work in groups in your own learning time.

The structure of the curriculum

Phase 1 of the course runs over four semesters across the first two years of the programme. Years one and two are divided into two semesters. The overall structure of the curriculum is indicated here:

<https://blackboard.le.ac.uk/bbcswebdav/courses/MEX009/curriculum/index.html> and a diagram outlining the sequence of delivery of the units is shown below.

In each week therefore you are scheduled for about 20 hours teaching, which you must attend. You should expect to spend at least an equivalent time in directed learning, a minimum of 40 hours per week overall.

The Compassionate, Holistic Diagnostic Detective Course (Early Clinical Apprenticeship) course runs in all semesters, and consists of a series of events some based in the Medical School, some in the Clinical Skills Unit, and some in the hospitals and General Practices in the city and county.

Each of the main core unit deals with a topic or system of the body in an integrated, interdisciplinary way. Each unit is the responsibility of one, or occasionally two, unit leaders who co-ordinate the work of a small team of staff drawn from various disciplines, including in all cases relevant clinical disciplines, to deliver the unit curriculum as described in the later pages of this document. These curricula have all been approved by the Board of Studies, the Programme Executive and Curriculum Group of the School and are the responsibility of the School as a whole, not individual disciplines or departments within it. Although you will often be taught by specialists in their subject, you will not be learning "Anatomy", "Physiology", "Biochemistry", etc., as individual subjects, nor will you be assessed upon them separately. The critical test will be your ability to interrelate material in a rational approach to clinical medicine.

The teaching and learning in the core is the basic material that you will work with for the rest of your life to support your continued learning of clinical medicine, and achieve the objectives laid down for you by the GMC. You must therefore complete the core course satisfactorily if you are to be permitted to carry on with your course.

Throughout Phase I, as you study your Personal Tutor (PT) will help you to plan your future personal and professional development, to consider the career opportunities open to you and to recognise the importance, to your practice of medicine, of looking after yourself at every level.

Organisation of the units

You will be issued a detailed timetable of the activities scheduled for you. Attendance at all of these scheduled events is compulsory. Attendance will be monitored and will form part of your assessment (see below). The remaining time is available to you for your own learning and both educational resources and tutorial support will be provided to help you.

Morning sessions usually begin at 09.00 and afternoon sessions normally start at 13.00 or 14.00. There are however exceptions so pay close attention to your unit workbooks and messages from the administrative staff.

The scheduling of activities within the sessions for any particular unit is the responsibility of the unit team. You will be informed in writing of the detailed week-to-week schedule in the unit handbooks. Each semester also has its own area in the Blackboard electronic student learning environment, which you should consult frequently for additional information. The schedule of activities in the clinical units will be given to you at the beginning of each year.

Many other facilities will be available to you to support your learning, such as the electronic student learning environment, dissecting room and its associated additional resources. Additionally, the university has available a range of communal learning spaces and open access computer suites with access to printing facilities. The times that each facility is available will be advertised

Assessment

Never forget that the test of your learning during a medical course is not the passing of exams, but how well you are able to deal with the clinical problems you face as a doctor. It will be of little comfort to your patients (or yourself) if you 'play the system', manage to scrape through the course with a minimum of learning and then find it difficult to cope with the clinical responsibilities of a Foundation Doctor. The Personal and Professional Development Programme aims to help you plan your development in a context much broader than that of passing assessments. Your progress in this programme is not formally assessed but is regularly reviewed with your Personal Development Tutor.

The assessment at each stage of this course is not there to define what you should learn. The outcomes are there for that purpose. Assessments are designed to check whether you have the competence necessary to continue to the next stage or whether you should be asked to do more work. We will provide the opportunity for formative assessment; that is assessment designed to produce feedback which will enable you to identify deficiencies in your understanding, and plan appropriate work to remedy them.

Full details of the assessment procedures are given in the document "MBChB Code of Practice for Assessment in Phase 1" a document that is updated annually. A copy will be available via the School's web pages.

Formative assessment opportunities are included in the unit teaching providing several opportunities to judge your progress through feedback on formative assessment performance.

Details of the units

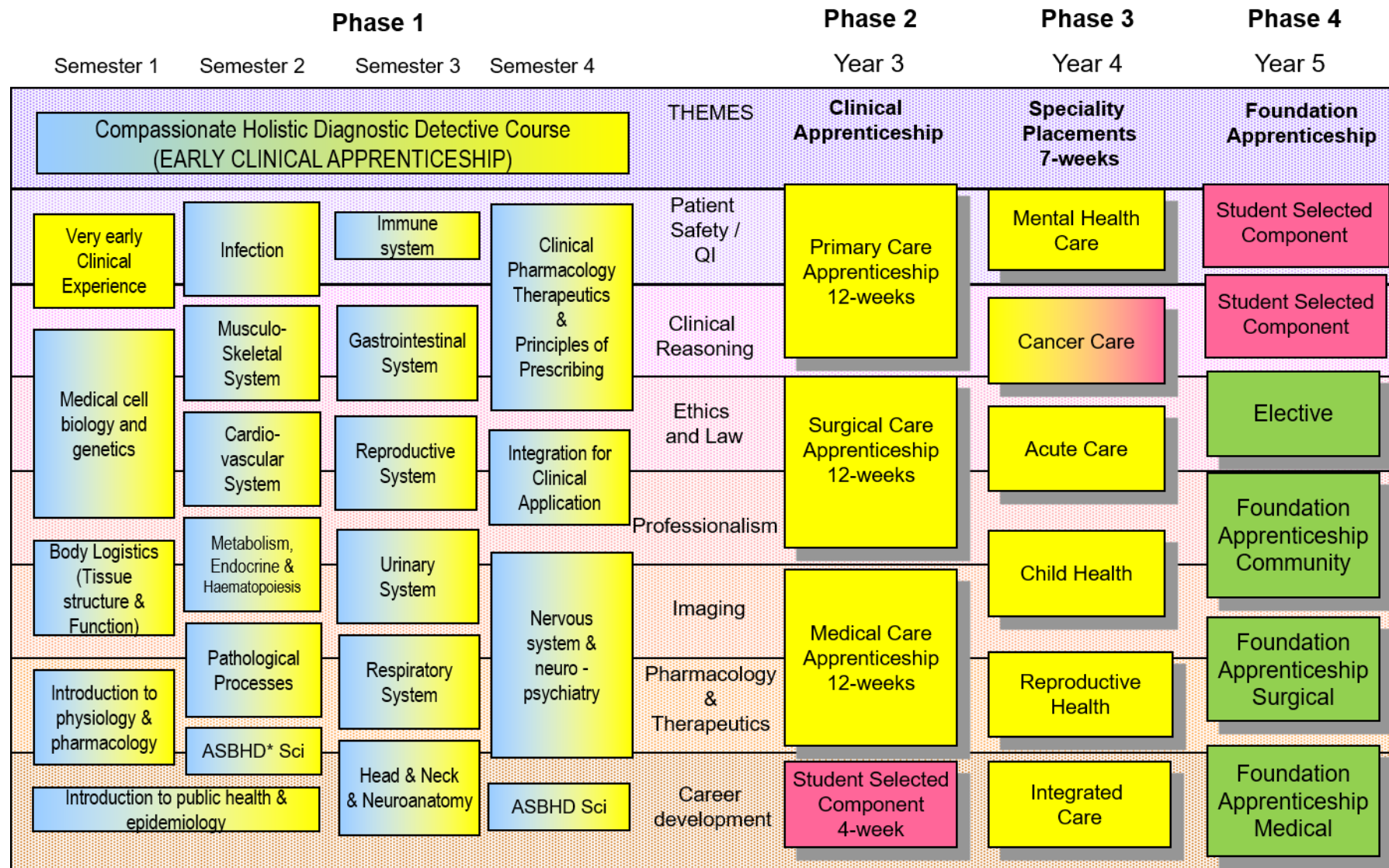
The remainder of this course document is taken up by a description of each of the elements of the course. For each unit, there is a statement of aims and outcomes. Detailed descriptions of the schedule for each unit, including the activities scheduled for each session and the type of directed learning you will undertake in your own time will be provided in the supporting documentation provided for each unit. As with all courses, Phase I of the curriculum is subject to continuing development. Some details of the units may change as the development proceeds. You will be notified accordingly.

You should aim to read through the whole of this document, so that you can see how the whole course will be organised, and get a feel for the task in front of you. Do not be intimidated. The task is well within your capabilities provided you maintain your enthusiasm and organise your time effectively. You will even enjoy it!

Best of luck,

All members of the School.

MBChB Programme Overview – Block Sequence View



* Applied Social, Behavioural and Healthcare Delivery Sciences

Induction Programme

Semester	1
Total hours	70
Unit lead	Prof Nick London Dr David Heney Dr Laura Mongan
GMC Outcome(s)	23 a, d, h

Aims

To provide orientation to the programme, the School, and the University. To equip the students with access to support by presenting points of contact. To equip students with the skills and training necessary to undertake the Very Early Clinical Experience component.

Outcomes

On completion of this unit, you should:

- be able to identify the relevant point of contact for assistance of an academic, administrative, pastoral or professional development nature
- be able to log on to the Virtual Learning Environment to access your course materials
- have completed mandatory training in health and safety, such as safe moving and handling, basic life support, hand-washing.
- demonstrate a basic understanding of the pre-eminence of patient safety in undergraduate medical training
- be able to demonstrate a basic understanding of principles of quality improvement in healthcare

Very Early Clinical Experience

Semester	1
Total hours	70
Unit lead	Prof Nick London Dr David Heney
GMC Outcome(s)	21 a, b, d, e; 22 a, b; 15 a - f

Aims

To provide a framework around which students can develop their professional identity. Development of professional identity will continue throughout the programme through continued integration of knowledge, experiences and reflection.

To enable the student to develop greater awareness about the real-world experience of being a Foundation Year doctor, to gain greater insight into the team-dynamics among medical staff and appreciate the importance of team working across the various healthcare professionals and to demonstrate the relevance of pure science to clinical medicine.

Outcomes

On completion of this unit, you should be able to:

- establish a mechanism by which you can identify for yourself the important questions which may be asked about any clinical presentation or condition
- establish an intellectual process that enables you to identify and catalogue, as the medical course progresses, information relevant to individual clinical presentations or conditions
- build mental structures which will allow you to collect, as the medical course progresses, information systematically
- demonstrate an understanding of the importance of team working
- demonstrate an understanding of the importance of communication skills in clinical medicine

in order that students will be able to:

- Integrate the knowledge derived from engagement with this unit with that derived from other units
- Formulate solutions to clinical problems using the knowledge and understanding derived from their engagement with this unit
- Make inferences across their knowledge base in order to solve problems related to the practice of medicine

Medical Cell Biology and Genetics

Semester	1
Timetabled hours	84
Self-directed hours	84
Unit lead	Dr Cas Kramer Dr Mark Leyland
GMC Outcome(s)	8 a – g; 14 a – b, d

Aims

To present the clinical importance of:

I fundamental cell biological principles

- Cellular compartments and ultrastructure
- Introduction to biological molecules, including oxygen carrying proteins, plasma proteins, selected clinically important enzymes, DNA
- Biochemical pathways and reactions

Including presentation of the clinical importance fundamental principles of chemistry in the context of homeostasis in a biological system.

II fundamental principles of molecular and clinical genetics including

- DNA, genes and chromosomes
- Cell division
- Allelic variation and Inheritance
- DNA mutation
- Population genetics and epigenetics
- Overview of genetic testing modalities

Outcomes

On completion of this unit students should be able to:

- Describe the structural components of nucleic acids, and compare DNA and RNA.
- Describe the relationship between DNA, chromosome and genes.
- Describe DNA replication.
- Compare mitosis and meiosis.
- Explain the principles of the genetic code, and describe the processes of transcription, translation and post-translational modifications.
- Describe the types of DNA mutations at the nucleotide level.
- Describe the molecular basis of common inherited diseases.
- Describe the chromosomal basis of inheritance, and explain the principles of pedigree analysis.
- Describe the types of DNA mutations at the chromosomal level.
- Describe in simple terms the processes by which heritable changes in gene expression occur without entailing changes in DNA sequence
- Describe the molecular methods used to analyse genes and proteins, and explain how these methods are used in clinical situations as well as the ethical issues that may arise.

- Describe the types of genetic testing available, such as diagnostic testing (symptomatic individual), predictive testing, carrier testing, prenatal/pre-implantation genetic diagnosis and genetic screening, and explain the ethical issues that may arise.
- Describe simply the principles of population genetics, i.e. the distribution of alleles across populations as this relates to important common conditions.
- Interpret electron micrographs of organelles in the eukaryotic cell, and explain their structure-function relationships.
- Describe the basic cell structure, and explain how this relates to functional processes in the cell.
- Describe the fluid mosaic model of biological membrane structure.
- Describe the chemistry of amino acids, and explain how this relates to protein structure.
- Describe cytoskeletal interactions.
- Interpret pH, concentrations and explain buffers.
- Describe the cell cycle
- Outline the control of metabolic pathways
- Categorise, through application of clinical significance, important aspects of protein biochemistry such as
 - regulation,
 - post-translational modification,
 - molecular, metabolic and physiological function
- using examples of
 - enzymes,
 - oxygen carrying proteins and
 - immunoglobulins

in order that students will be able to:

- Integrate the knowledge derived from the study of this unit with that derived from other units
- Formulate solutions to clinical problems using the knowledge & understanding derived from the study of this unit
- Make inferences across their knowledge base in order to solve problems related to the practice of medicine

Methods of Assessment

Feedback

All group work sessions are led by expert tutors whose role is to provide real-time feedback on progress in the topic under discussion. In addition, information will be provided to help students to gauge their progress using a range of techniques selected from the following range of feedback tools: quizzes, unit mini-tests, post-session follow-up tasks, interactive teaching tools and e-assessment tools.

Students will be encouraged by their Personal Tutor to discuss in-course feedback as well as that derived from more formal Formative and Summative Assessment feedback in staged meetings across the academic year.

Formative Assessment

An opportunity will be provided at least once per semester to experience an assessment of unit content comprised of items of similar format, style and standard as the summative assessment.

Summative Assessment

This unit will be assessed on the basis of satisfactory attendance and also by performance in integrated End of Semester Assessments (ESAs) and Objective Structured Clinical Exams (OSCEs) throughout Phase 1, including Resit Examinations. For full details of summative assessment construction, processes and delivery please see the document

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Knowledge, Skills and Experiential Learning

Summative assessment is designed to test evidence of

1. Appropriate knowledge
2. Application of integrated knowledge of scientific, social, behavioural and population sciences to solve clinical problems
3. Application of the ability to interpret the results of clinical investigations

Body Logistics (Tissue Structure and Function)

Semester	1
Timetabled hours	44
Self-directed hours	44
Unit lead	Dr Jonathan Hales
GMC Outcome(s)	8 a – g; 14 a – b, d

Aims

To present in a clinical context the fundamental principles of the development, structure and specialisations of the tissues of the body and structure and organisation of cells, tissues, organs and body systems. Modern imaging techniques will be used to demonstrate integration at all levels.

Outcomes

On completion of this unit students should be able to:

- Recall the biologically important volumes in the body and describe the fluid compartments in the body, and explain how they affect each other.
- Describe light microscopy.
- Interpret light micrographs of epithelial, connective, muscles and nervous tissues, and explain their structure-function relationships.
- Describe the types of simple and compound epithelia, and explain their function, including the role of cell surface specialisations.
- Describe the structural and functional relationships between epithelial, connective, muscles and nervous tissues which permit more complicated arrangements at body surfaces, particularly in the skin, but also in the gastrointestinal wall.
- Describe the types of simple and compound glands on a structural and functional basis, describe their epithelial derivation, and compare exocrine and endocrine glands.
- Describe early embryonic development including the origin of germ layers.
- Describe the types of connective tissue.
- Explain the function of the cellular components of connective tissue types.
- Explain the function of the extracellular components of connective tissue types.
- Describe the types of cartilage and bone, and explain their function.
- Describe the process of ossification, and explain how some diseases affect bone.
- Describe the structure of neurons and their supporting cells, and explain their function.
- Describe the structure of nervous tissue and the general organisation of the nervous system (CNS, PNS and ANS).
- Describe the structure of skeletal, cardiac and smooth muscles, and explain their function and how defects result in muscle disorders, such as myasthenia gravis, muscles atrophy and muscular dystrophy.
- Describe the types of blood cells and their origin, and explain their function.
- Describe the surface locations of major organs.

in order that students will be able to:

- Integrate the knowledge derived from the study of this unit with that derived from other units
- Formulate solutions to clinical problems using the knowledge & understanding derived from the study of this unit
- Make inferences across their knowledge base in order to solve problems related to the practice of medicine

Methods of Assessment

Feedback

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Formative Assessment

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Summative Assessment

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Knowledge, Skills and Experiential Learning

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Introduction to Physiology and Pharmacology

Semester	1
Timetabled hours	44
Self-directed hours	44
Unit lead	Dr Mike Mulheran and Dr Bob Norman
GMC Outcome(s)	8 a – g; 14 a – b, d

Aims

To present the clinical importance of fundamental principles of

I principles of the cellular physiology including

- membrane transport,
- intercellular signalling and excitable cells

II cellular and molecular physiology, the basis for pharmacology and the modification of cellular function

- Exploitation of cellular effectors as drug targets
- Intracellular signalling

III pharmacokinetics and pharmacodynamics

Outcomes

On completion of this unit students should be able to:

- Compare osmolarity and osmolality.
- Explain the concept of concentration gradients.
- Recall the clinically important ions, and explain why they are clinically important.
- Recall select clinical reference ranges, and explain their clinical relevance.
- Describe the biological communication processes involving hormones, local mediators and neurotransmitters.
- Explain the concept of homeostasis, and describe how changes in feedback mechanisms affect it.
- Explain the ionic basis of the membrane potential.
- Describe voltage-gated ion channels and electrical excitability of membranes, and explain the ion permeability changes associated with the action potential.
- Describe factors affecting impulse conduction velocity in nerves.
- Describe the process of excitatory and inhibitory neurotransmission.
- Describe the divisions of the autonomic nervous system (ANS) on an anatomical and pharmacological basis, and the steps of neurotransmission at cholinergic and adrenergic synapses in the autonomic nervous system (ANS) and the mammalian neuromuscular junction.
- Explain the principles of drug action using the autonomic nervous system (ANS) as a drug target example.
- Explain the concept of receptor specificity
- Define the terms agonist and antagonist, and compare competitive and non-competitive antagonism.
- Describe the variety of receptor mechanisms, and explain how they influence the behaviour of cells.

- Describe the variety of effector mechanisms involved in cellular signalling pathways, and explain the concepts of transducing proteins, second messengers and signal pathway cascades.
- Describe whole-body considerations of drugs reaching their sites of therapeutic action, and explain the principles of drug bioavailability, inactivation, elimination and the adaptive changes that can occur in receptor populations when exposed to agonists and antagonists.
- Describe the pathways involved in drug metabolism.

in order that students will be able to:

- Integrate the knowledge derived from the study of this unit with that derived from other units
- Formulate solutions to clinical problems using the knowledge & understanding derived from the study of this unit
- Make inferences across their knowledge base in order to solve problems related to the practice of medicine

Methods of Assessment

Feedback

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Formative Assessment

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Summative Assessment

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Knowledge, Skills and Experiential Learning

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3. Application of the ability to interpret the results of clinical investigations

Introduction to Public Health and Epidemiology

Semester	1 and 2
Timetabled hours	24
Self-directed hours	24
Unit lead	Dr Ron Hsu
GMC Outcome(s)	11 a, f, g, j

Aims

To introduce key theoretical concepts of population science

- Disease surveillance
- Application of epidemiological data in managing healthcare
- Environmental and occupational hazards
- Introduction to global perspectives of health and disease

Such that students are able to develop these skills towards application of population scientific principles to health improvement and clinical effectiveness improvement in the later stages of undergraduate training

Outcomes

On completion of this unit students should be able to:

- Describe the types of epidemiological investigations.
- Describe and interpret disease surveillance data.
- Describe and interpret healthcare surveillance data.
- Describe global health issues and their impact on local health issues.
- Describe environmental hazards and their impact on health.
- Describe occupational hazards and their impact on health.

in order that students will be able to:

- Integrate the knowledge derived from the study of this unit with that derived from other units
- Formulate solutions to clinical problems using the knowledge & understanding derived from the study of this unit
- Make inferences across their knowledge base in order to solve problems related to the practice of medicine

Methods of Assessment

Feedback

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Knowledge, Skills and Experiential Learning

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Metabolism, Endocrine System and Haematology

Semester	2
Timetabled hours	44
Self-directed hours	44
Unit lead	Dr Steve Ennion
GMC Outcome(s)	8 a – g, 11h; 14 a – b, d

Aims

To present the clinical importance of fundamental principles of

- Metabolism of carbohydrate, proteins, and triglycerides
- Haematopoiesis including Iron metabolism and erythropoiesis
- Lipid transport
- Introduction to nutrition (protein, energy and micronutrients) and malnutrition
- Perturbations of energy metabolism, e.g. obesity and diabetes mellitus

Outcomes

On completion of this unit students should be able to:

- Explain how the energy required for cellular activity is derived from the food eaten.
- Interpret Body Mass Index, and describe the factors involved in the long-term regulation of body weight.
- Recall the essential components of the diet, and explain why they are essential.
- Describe the metabolic pathways by which carbohydrates, lipids, amino acids and alcohol are degraded and are synthesised from appropriate precursors, and explain their clinical relevance.
- Describe the metabolic problems of anaerobic conditions, and explain their clinical consequences.
- Describe how glucose and lipids are transported and stored in the body, and explain the clinical consequences of defects in these pathways.
- Describe how ketone bodies are produced, and explain their clinical relevance.
- Describe how ammonia is produced, and explain why it is toxic and how it is detoxified.
- Explain the concept of homeostasis, and describe control systems in the body.
- Describe the metabolic changes that occur during feeding, fasting, starvation, pregnancy and exercise, and explain how they are controlled.
- Explain why the blood glucose concentration is normally held relatively constant, and explain the metabolic and clinical consequences of untreated type 1 and type 2 diabetes mellitus.
- Describe the structure, function, mode of action and control of secretion of the major hormones involved in the control of metabolism.
- Describe the roles of iron metabolism, Vitamin B12 and folate in erythropoiesis.

in order that students will be able to:

- Integrate the knowledge derived from the study of this unit with that derived from other units
- Formulate solutions to clinical problems using the knowledge & understanding derived from the study of this unit
- Make inferences across their knowledge base in order to solve problems related to the practice of medicine

Methods of Assessment

Feedback

All group work sessions are led by expert tutors whose role is to provide real-time feedback on progress in the topic under discussion. In addition, information will be provided to help students to gauge their progress using a range of techniques selected from the following range of feedback tools: quizzes, unit mini-tests, post-session follow-up tasks, interactive teaching tools and e-assessment tools.

Students will be encouraged by their Personal Tutor to discuss in-course feedback as well as that derived from more formal Formative and Summative Assessment feedback in staged meetings across the academic year.

Formative Assessment

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Summative Assessment

This unit will be assessed on the basis of satisfactory attendance and also by performance in integrated End of Semester Assessments (ESAs) and Objective Structured Clinical Exams (OSCEs) throughout Phase 1, including Resit Examinations. For full details of summative assessment construction, processes and delivery please see the document "Code of Practice for Assessment in Phase 1" available here:

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Knowledge, Skills and Experiential Learning

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3. Application of the ability to interpret the results of clinical investigations

Musculo-Skeletal System

Semester	2
Timetabled hours	44
Self-directed hours	44
Unit lead	Dr Caroline Woodley
GMC Outcome(s)	8 a – g; 14 a – b, d

Aims

To understand, through consideration of common clinical conditions and disorders of the musculoskeletal system:

- The structure and function of the bones, joints and muscles
- The blood and nerve supply of the upper and lower limb
- The structure and function of the vertebral column
- The use of imaging in the assessment of disorders of the musculoskeletal system

Outcomes

On completion of this unit students should be able to:

- outline the structural and mechanical and physiological functions of the skeleton and relate the shape of bones to their function.
- outline the homeostatic functions of bone, effects of nutrition and the role of hormones to maintain homeostasis
- outline the salient features of bone disorders: osteogenesis imperfecta, osteoporosis, osteomalacia, rickets and Paget's disease
- outline common sites and consequences of fractures in the upper and lower limb and vertebral column and describe the mechanisms of repair and healing following a fracture
- outline the structural and functional features of joints and describe the common causes of joint injuries (e.g. dislocation, fracture, sprain) and joint disorders/pathology (e.g. bursitis, osteoarthritis, rheumatoid arthritis).
- describe the gross structure of skeletal muscle (including the connective tissue elements), its attachment to bones and its blood and nerve supply
- describe the physiological properties of muscle tissue (fast and slow fibres) and its basic element, the motor unit, and explain muscle contraction, relaxation and fatigue in relation to sources of oxygen and energy requirements.
- identify salient features of the bones of the pectoral and pelvic girdles, upper and lower limbs and vertebral column on the skeleton and on radiological images and outline common sites, causes and consequences of their fracture.
- describe the structure, function and main movements of the joints of the upper limb, lower limb and vertebral column and their common injuries.
- describe and demonstrate the movements of the muscles of the pectoral and pelvic girdles and the upper and lower limbs.
- describe the major nerves of the brachial, lumbar and sacral plexuses, their motor and sensory (including segmental) distribution and the consequences of injuries to them.
- describe the principal arteries and veins of the upper and lower limb, locate common sites of arterial pulses and venepuncture and outline the mechanisms of venous return from the lower limb.
- describe major neurovascular structures in the axilla, inguinal and gluteal regions, locate superficial structures (tendons and neurovascular) at the elbow, wrist, knee and ankle and describe consequences of injuries to them.
- describe the general anatomy of the vertebral column, some of its common injuries and causes of back pain.

- describe the effects of ageing and dysfunction of the musculoskeletal system and outline normal and abnormal gait.
- describe the positional changes of muscles, neurovascular elements and dermatomes of the upper and lower limb during embryonic development.

in order that students will be able to:

- Integrate the knowledge derived from the study of this unit with that derived from other units
- Formulate solutions to clinical problems using the knowledge & understanding derived from the study of this unit
- Make inferences across their knowledge base in order to solve problems related to the practice of medicine

Methods of Assessment

Feedback

All group work sessions are led by expert tutors whose role is to provide real-time feedback on progress in the topic under discussion. In addition, information will be provided to help students to gauge their progress using a range of techniques selected from the following range of feedback tools: quizzes, unit mini-tests, post-session follow-up tasks, interactive teaching tools and e-assessment tools.

Students will be encouraged by their Personal Tutor to discuss in-course feedback as well as that derived from more formal Formative and Summative Assessment feedback in staged meetings across the academic year.

Formative Assessment

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Summative Assessment

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Knowledge, Skills and Experiential Learning

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3. Application of the ability to interpret the results of clinical investigations

Cardiovascular System

Semester	2
Timetabled hours	44
Self-directed hours	44
Unit lead	Dr Margaret Barnes-Davies
GMC Outcome(s)	8 a – g; 14 a – b, d

Aims

To enable understanding of the structure and function of the human cardiovascular system, how its condition is assessed including use of imaging techniques, how cardiovascular function is altered in common diseases, and begin to understand the basis of management of cardiovascular disorders.

Outcomes

On completion of this unit students should be able to:

- describe the structure and relations of the heart and major blood vessels of the body and relate their structure to function in the circulation
- describe the operation of the heart as a pump, including the function of the heart valves, and be able to use their understanding of the cardiac cycle as a basis for physical examination of the heart
- describe the development of the heart, some common congenital defects, and the pathology of valvular problems
- describe the factors influencing blood flow to individual tissues, the mechanisms of control of vascular resistance and the special features of the pulmonary, cerebral, coronary, skin and skeletal muscle circulations
- describe in general terms the role of the autonomic nervous system in the control of cardiovascular function, including the concepts of local and central control
- describe the mechanisms controlling cardiac output in the normal individual, and how they operate in common situations such as exercise
- describe the molecular and cellular events underlying the cardiac cycle, the principles of altering heart rhythm and contractility by drugs, the categories of drugs used for common cardiac conditions and the principles involved
- describe the features of the normal electrocardiogram and their relationship to electrical events in the heart, and be able to interpret changes in the ECG produced by common clinical conditions
- describe the structure and properties of the coronary circulation, and the pathology and effects of ischaemic heart disease
- describe the assessment, diagnosis and management of a patient presenting with acute chest pain
- describe some common causes, major effects and treatment of heart failure
- describe the essential characteristics of shock

in order that students will be able to:

- Integrate the knowledge derived from the study of this unit with that derived from other units
- Formulate solutions to clinical problems using the knowledge & understanding derived from the study of this unit
- Make inferences across their knowledge base in order to solve problems related to the practice of medicine

Methods of Assessment

Feedback

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Knowledge, Skills and Experiential Learning

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1. Appropriate knowledge
2. Application of integrated knowledge of scientific, social, behavioural and population sciences to solve clinical problems
3. Application of the ability to interpret the results of clinical investigations

Infection

Semester	2
Timetabled hours	40
Self-directed hours	40
Unit lead	Dr David Heney Dr David Jenkins
GMC Outcome(s)	8 a – g, 11 e; 14 a – b, d

Aims

To allow the student to develop a structure to consider a patient who presents with a possible infection, via exploration of a selection of clinical problems. These clinical problems will exemplify selected key micro-organisms, highlighting principles of microbial physiology as well as the nature of the patient-pathogen interaction.

Outcomes

On completion of this unit students should be able to:

- Describe the principles of the infection model
- Describe a clinical approach to gathering information to evaluate a patient with a possible infection and to use the principles of pathogen/patient/person/place to consider a diagnosis of infection.
- Describe the patient-pathogen interaction for a range of clinically important infections
- Describe the use of laboratory investigations to aid in the diagnosis of infection, and to interpret common and important results for a patient with a possible infection
- Describe the principles of managing a patient with infection, both with reference to general measure of support and specific anti-microbial treatment. Note: this will be further considered in the Clinical Pharmacology unit
- Describe important issues linked with hospital-acquired infections; including how these are investigated and managed.
- Describe the role of the doctor and allied health professionals in the prevention of infections. To further describe additional specific measures to prevent infections.
- Outline the principles of the epidemiology of infective diseases and contrast infections acquired in different settings, including travel-acquired infections.
- Describe the response of the body to infection utilising the innate and acquired (adaptive) immune system in a range of clinical infections. To further describe the infective consequences of an immune system that functions inappropriately, including patients who are immunocompromised.

in order that students will be able to:

- Integrate the knowledge derived from the study of this unit with that derived from other units
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Methods of Assessment

Feedback

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Formative Assessment

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Summative Assessment

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Knowledge, Skills and Experiential Learning

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Pathological Processes

Semester	2
Timetabled hours	40
Self-directed hours	40
Unit lead	Dr Louisa Dunk
GMC Outcome(s)	8 a – g; 14 a – b, d

Aims

To provide an introduction to the basic pathological processes underlying the diseases encountered in study of the curriculum, allowing an understanding of the symptoms with which patients present, the physical signs demonstrable on examination and abnormal investigation results.

Outcomes

On completion of this unit students should be able to describe and explain the key features of:

- cell injury
- acute inflammation
- chronic inflammation
- healing and repair
- haemostasis and thrombosis
- atheroma
- cellular adaptations
- neoplasia.

in order that students will be able to:

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Methods of Assessment

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Applied Social, Behavioural and Healthcare Delivery Sciences I & II

Semester	1, 2 and 4
Timetabled hours	36.5
Self-directed hours	36.5
Unit lead	Dr Natalie Armstrong Dr Carolyn Tarrant
GMC Outcome(s)	9 a -g; 10 a – e; 11 a – d, f, l, j; 12 a – c; 15 d, 20, g, 23 c – e, 23g, 23 j

Aims

To enable

- the delivery of safe, high quality care in the NHS.
- the delivery of truly patient-centred care.
- continual improvement in healthcare.
- an informed approach to behaviour change and health promotion at both the societal and individual level.
- respect and effective communication with diverse patient groups and colleagues

Through

- introduction of key theoretical concepts underpinning the biopsychosocial model for health and illness.
- exploration of the influence of psycho-social factors on: the development of illness; patients' use of, and engagement with, health services; patients' experiences of both illness and healthcare; patient outcomes.
- introduction of key theoretical concepts underpinning challenges in delivering high quality, safe healthcare.

Outcomes

On completion of this unit students should be able to:

- Apply basic psychological and sociological concepts and theories relevant to professional practice, and relate these to the practical knowledge and insights gained elsewhere in the medical curriculum;
- Discuss psychological and social factors that contribute to health, illness and disease;
- Describe evidence on inequalities in health and inequities in provision, and critically evaluate explanations for inequalities and inequities;
- Discuss adaptation to and coping with chronic conditions, disabilities, and major life change (such as terminal illness);
- Assess the impact of issues relating to equality and diversity on health behaviours and outcomes;
- Recognise some of the issues implicated in communicating well with individuals and groups regardless of their age, social, cultural or ethnic backgrounds, sexuality or mental or physical disabilities; reflect upon and challenge personal stereotypes;
- Explain the need for evidence about healthcare interventions, discuss the problematic nature of evidence, and describe some of the difficulties of implementing evidence in practice;
- Discuss critically the conceptual and philosophical basis for health promotion and preventive healthcare in the context of recent policy initiatives;
- Describe psychological models of health related behaviour and adherence to treatment, and identify appropriate strategies for promoting health behaviour change (such as in the case of substance misuse);

- Recognise quality and safety in healthcare as an important responsibility of doctors, describe evidence demonstrating problems of quality and safety, offer explanations for why such problems occur and how they might be tackled;
- Describe and discuss critically approaches to the measurement of health, quality in healthcare, outcomes of healthcare, health related quality of life and patient satisfaction;
- Describe and analyse the current structure of the National Health Service (NHS), the historical development of the NHS, and the historical development and current role of the medical profession in the delivery of health services;
- Describe how the work of doctors is affected by issues of policy, provision and evaluation of healthcare;
- Discuss critically the organisational and financial problems confronting modern healthcare systems, particularly as they apply to the NHS;
- Recognise the importance of patients' views and experiences of health services, and discuss the options for eliciting and using these to evaluate and improve care.

in order that students will be able to:

- Integrate the knowledge derived from the study of this unit with that derived from other units
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Methods of Assessment

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Formative Assessment

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Immune system

Semester	3
Timetabled hours	16
Self-directed hours	16
Unit lead	Dr Yassine Amrani
GMC Outcome(s)	8 a – g; 14 a – b, d

Aims

The unit aims to present the key principles of the function of the immune system by means of exploration of important clinical entities such as allergy.

Outcomes

On completion of this unit students should be able to:

- outline the maturation of B cells and their response to antigenic stimulation, and describe the structure and function of antibodies and their role in the elimination of extracellular pathogens.
- outline the role of T cells in immunity, contrast how T cells and B cells recognise antigens, and discuss the consequences of T cell stimulation.
- outline the basic approaches to immunisation and their practical application.
- describe the clinical features and mechanisms of immunodeficiency disease.
- outline the features of autoimmunity and autoimmune diseases, and the mechanisms whereby immunological reactions can produce tissue injury.

in order that students will be able to:

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Methods of Assessment

Feedback

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Gastrointestinal System

Semester	3
Timetabled hours	48
Self-directed hours	48
Unit lead	Dr Mark Hamilton
GMC Outcome(s)	8 a – g; 14 a – b, d

Aims

To enable the student to understand the structure, function and development of the human gastrointestinal system, how its condition is assessed, how its function is altered in common diseases, and understand the basic principles of management of gastrointestinal illness.

Outcomes

On completion of this unit, the students should be able to:

- describe the gastro-intestinal tract in terms of its gross and histological structure (including its blood and lymphatic supply and innervation) and its radiological and endoscopic appearance.
- describe the structure and function of the salivary glands, control of their secretion and their role in the oral environment.
- describe the structures and processes involved in mastication and swallowing food and outline the causes of dysphasia and of common oesophageal disorders such as achalasia and gastro-oesophageal reflux.
- explain how the secretions and motility of the stomach contribute to digestion and the control of gastric emptying.
- describe the main effects of peptic and gastric ulcer disease on the structure and function of the stomach, duodenum and associated structures.
- explain how the secretions of the pancreas and liver facilitate digestion and excretion
- describe common liver and gall bladder disorders (e.g. ascites and portal hypertension, jaundice, cirrhosis, gallstones, bile & pancreatic duct unitage and pancreatitis) and their consequences.
- describe the structural and functional adaptations of the intestines in relation to absorption of water, electrolytes, carbohydrates, proteins, lipids and vitamins and explain the principal methods and mechanisms relating to processes of absorption and in elimination of undigested and unabsorbed materials.
- explain, in general terms, the basis of disorders such as malabsorption, diarrhoea, steatorrhoea, constipation & inflammatory bowel disease and their consequences.
- Describe common infections of the GI tract, their diagnosis and management
- explain the basis of abdominal visceral and somatic pain.
- describe the embryology of the gastrointestinal tract in the adult and explain common congenital disorders (hiatus hernia, Meckel's diverticulum, diverticulosis and common sites of atresia and fistulae of the gastro-intestinal tube).
- describe the structure of the abdominal wall, inguinal canal and the structural basis of the common congenital defects (e.g. inguinal, umbilical and other hernias).
- describe the natural history of the common benign and malignant tumours of the gastro-intestinal tract and its associated structures.

in order that students will be able to:

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Methods of Assessment

Feedback

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Formative Assessment

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Summative Assessment

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Reproductive System

Semester	3
Timetabled hours	48
Self-directed hours	48
Unit lead	Dr Laura Mongan
GMC Outcome(s)	8 a – g; 14 a – b, d

Aims

To enable the student to develop an understanding of the structure and function of the reproductive system, how its condition is assessed, how its function is altered in common diseases and conditions, and understand the basic principles of management of obstetric and gynaecological problems.

Outcomes

On completion of this unit students should be able to:

- describe the formation of the gametes in both sexes.
- describe the embryological and fetal development of the reproductive tract in the female and male, the sequence of anatomical and physiological changes at puberty, and the mechanisms of these changes.
- describe the anatomy of the male reproductive system, the histology of the testis and accessory sexual organs, and likewise that of the female reproductive tract and the histology of the ovaries, uterus, cervix, vagina and breast.
- describe the ovarian and uterine cycles, explain the endocrine control of the menstrual cycle, and outline common menstrual problems.
- describe the mechanism of the menopause.
- describe the processes involved in coitus, the process of fertilisation and implantation, and mechanisms of action of common forms of contraception.
- list reasons for male and female infertility.
- describe the role of the placenta in the maintenance of pregnancy and the maternal and fetal adaptations to pregnancy.
- describe the normal pattern of fetal development and the principles of detection of fetal abnormalities.
- describe the processes involved in normal delivery and some common problems of labour.
- describe mechanisms of lactation.
- describe common sexually transmitted diseases, their detection and treatment, common malignancies of the reproductive tract in the male and female,.

in order that students will be able to:

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Methods of Assessment

Feedback

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Urinary System

Semester	3
Timetabled hours	48
Self-directed hours	48
Unit lead	Dr Diane Hudman
GMC Outcome(s)	8 a – g; 14 a – b, d

Aims

To enable the student to understand the structure and function of the urinary system, how it is affected by common diseases, how its condition may be assessed, and the basic principles of treatment of disorders of the urinary system.

Outcomes

By the end of the unit students should be able to describe:

- The structure and relations of the kidney, ureters, bladder and urethra in the male and female, and the ways in which these structures may be imaged and examined.
- The fluid compartments of the body, their electrolyte composition, and state the normal concentrations of major electrolytes in extracellular fluid, blood and urine.
- The histological structure of the kidney, and identify the component parts of the nephron.
- The structure of the glomerulus and the process of glomerular ultrafiltration.
- How the kidney is able to elaborate urine that is more concentrated or more dilute than plasma.
- Renal responses to extracellular fluid volume depletion and other common alterations in systemic haemodynamics.
- The mechanisms controlling sodium and potassium balance.
- The role of the kidney in maintaining acid base balance, and interpret uncomplicated cases of acid base disturbances.
- Classes of diuretics and their mode of action.
- The bladder and control of micturition.
- Defence mechanisms of the urinary tract, common urinary tract infections and the principles of their assessment and treatment.
- Common pathological changes in the urinary tract, including glomerulonephritis, pyelonephritis, neoplasia, and prostate enlargement, and their clinical consequences.
- The features, consequences and management of acute and chronic renal failure.

in order that students will be able to:

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Methods of Assessment

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Respiratory System

Semester	3
Timetabled hours	48
Self-directed hours	48
Unit lead	Dr Sita Nanayakkara
GMC Outcome(s)	8 a – g; 14 a – b, d

Aims

To enable the student to understand the structure and function of the respiratory system, how it is affected by common diseases, how its condition may be assessed, and the basic principles of treatment of respiratory disorders.

Outcomes

On completion of this unit students should be able to:

- describe the structure and function of the nose, the connections between the nose, paranasal sinuses, pharynx, auditory tube & middle ear, and the structure and function of the paranasal sinuses, pharynx and larynx.
- describe the structure of the pleural cavity and lines of pleural reflection, the lobes of the lung and their surface marking, structure and arrangement of airways and blood vessels in the lungs, and the histology of the lung airways.
- describe the structure of a typical thoracic vertebra and rib, the relations and arrangement of muscles in the thoracic wall and diaphragm, and the function and distribution of the intercostal nerves, arteries and veins.
- describe the mechanism of inspiration and expiration, the measurement of lung volume and capacities, and common tests of lung function.
- describe the carriage of oxygen in the blood, explain the role of carbon dioxide in blood and its role in acid base balance, and describe the neural and chemical control of breathing, with particular reference to different types of respiratory failure.
- describe the defences of the lung against infection, the immunology of the lung, and the microbiology of common lung infections.
- describe the conditions of asthma, and chronic obstructive pulmonary disease; its presentation, diagnosis, cell biology, epidemiology and treatment with bronchodilators and other drugs.
- describe the classification, microbiology and principles of diagnosis and treatment of pneumonias, and tuberculosis.
- describe the definition and classification of interstitial lung disease, its relationship to occupational lung disease, its pathology and the principles of diagnosis and treatment.
- describe the pathology of lung cancers, their classification, and the principles of their diagnosis and management.
- describe common diseases of the pleura and chest wall.
- describe the changes in various types of respiratory failure and explain their physiological consequences.
- describe and be able to recognise the key features of a plain film radiograph of the chest, describe the features of and recognise uncomplicated lobar collapse, pneumothorax, consolidation, space occupying lesions in the lung and pleural effusion and estimate the cardiac index.

in order that students will be able to:

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Methods of Assessment

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Head, Neck and Neuroanatomy

Semester	3
Timetabled hours	48
Self-directed hours	48
Unit lead	Dr Lisa Quinn
GMC Outcome(s)	8 a – g; 14 a – b, d

Aims

To enable the student to understand the structures of the head and neck (including the brain) within functional and clinical contexts, and the basis of common clinical head and neck disorders and the procedures used to investigate them.

Outcomes

On completion of this unit students should be able to:

- describe and demonstrate clinically relevant features of the skull and its radiological images. These features will include the orbit and the context of the eyeballs, paranasal sinuses, air cells, auditory passages and temporomandibular joint.
- describe the clinical sequelae of fractures of the skull, face and cervical spine.
- describe the clinical outcomes from common head and neck bone pathologies e.g. Paget's, 2° deposits and cervical spine arthritis.
- outline the muscle groups involved in gaze and facial movements, mastication, swallowing and head movements.
- describe the clinical assessment of and explain patterns of sensory loss plus weakness of these muscle groups in terms of damage to head and neck innervation.
- describe the embryology of the eye, ear, nose and major visceral structures of the neck
- outline the anatomy and transducer function of special sense organs and the basis of their simple clinical testing and investigation.
- discuss the basis of common disorders associated with olfaction, paranasal sinuses, epistaxis, airways obstruction, tonsillar, salivary and other neck swellings; ear pain, deafness and dysequilibrium.
- demonstrate the position of the major nerves and vessels, discussing the clinical relevance of their surface anatomy in relation to clinical procedures (especially CVP line insertion and its complications) and explaining the basis of some common embryological defects.
- outline the disposition of cervical lymph nodes and explain their rôle in draining local territories and their involvement in more widespread disorders.
- outline the anatomical context of the thyroid (& parathyroids) and the consequences of enlargement related to cervical triangles and their rôle in localizing neck lumps generally.
- outline the anatomical basis of interpreting endoscopic images of the nose, pharynx and larynx; the anatomical context of the front of the trachea related to laryngeal obstruction.
- demonstrate knowledge of structures in anatomical cross sections and prosections in relation to interpreting radiological images of the head and neck.
- outline the gross anatomy of the nervous system and the function of specific nuclei and tracts.

in order that students will be able to:

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Clinical Pharmacology, Therapeutics and Introduction to Prescribing

Semester	4
Timetabled hours	56
Self-directed hours	56
Unit lead	Dr Mike Mulheran Dr Adrian Stanley
GMC Outcome(s)	8 a – g; 17 a, b; 14 a – b, d

Aims

To enable the students to understand the application of pharmacological principles to the treatment of patients, through a combination of system oriented, disease oriented and drug class oriented approaches, as well as principles of prescribing.

Outcomes

On completion of this unit, students should be able to:

- Identify targets for pharmacological action of drugs based on a thorough understanding of human physiology and pathophysiology
- Discuss the importance of pharmacokinetics and genetic variation in safe prescribing and the special considerations required in the elderly and in renal and hepatic dysfunction
- Describe the basic principles of clinical pharmacology which underpin safe and responsible prescribing practice
- Discuss the major routes of drug metabolism, and the principal mechanisms of drug interactions
- Discuss and elaborate on these principles in relation to common clinical scenarios
- Describe the mechanisms of action and principle adverse effects of drugs used in the treatment of cardiovascular disorders including hypertension, arrhythmias, hyperlipidaemia, ischaemic heart disease and heart failure
- Describe the mechanisms of action and uses of anti-platelet therapy, fibrinolytics and anticoagulants
- Describe the main mechanisms of action and associated adverse effects of sex hormones and drugs used in the treatment of diabetes
- Describe the pharmacological control of airway function
- Demonstrate an understanding of the importance of selective toxicity in the use of the commonest antimicrobials to treat infection
- Demonstrate an understanding of the mechanisms by which antiviral agents exert their effect
- Be familiar with general principles of chemotherapeutics applied to cancer
- Appreciate the main concepts underlying immunosuppression therapy
- Describe the principles of pharmacotherapy and mechanisms of action of drugs in central nervous system diseases, including the use of anti-psychotics, anticonvulsants, antidepressants and drugs used in the management of Parkinson's disease
- Describe the pharmacology of drugs used to control gut motility and nausea, as well as those affecting acid secretion in the stomach
- Demonstrate an understanding of the principles of safe prescribing

in order that students will be able to:

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Methods of Assessment

Feedback

All group work sessions are led by expert tutors whose role is to provide real-time feedback on progress in the topic under discussion. In addition, information will be provided to help students to gauge their progress using a range of techniques selected from the following range of feedback tools: quizzes, unit mini-tests, post-session follow-up tasks, interactive teaching tools and e-assessment tools.

Students will be encouraged by their Personal Tutor to discuss in-course feedback as well as that derived from more formal Formative and Summative Assessment feedback in staged meetings across the academic year.

Formative Assessment

An opportunity will be provided at least once per semester to experience an assessment of unit content comprised of items of similar format, style and standard as the summative assessment.

Summative Assessment

This unit will be assessed on the basis of satisfactory attendance and also by performance in integrated End of Semester Assessments (ESAs) and Objective Structured Clinical Exams (OSCEs) throughout Phase 1, including Resit Examinations. For full details of summative assessment construction, processes and delivery please see the document "Code of Practice for Assessment in Phase 1" available here:

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Knowledge, Skills and Experiential Learning

Summative assessment is designed to test evidence of

1. Appropriate knowledge
2. Application of integrated knowledge of scientific, social, behavioural and population sciences to solve clinical problems
3. Application of the ability to interpret the results of clinical investigations

Nervous System and Neuropsychiatry

Semester	4
Timetabled hours	56
Self-directed hours	56
Unit lead	Dr Steve Jacques
GMC Outcome(s)	8 a – g, 9 a, b; 14 a – b, d

Aims

To enable the student to understand the function of the nervous system as well as the neurophysiological basis for common and significant neurological, psychological and psychiatric conditions.

Outcomes

On completion of this unit students should be able to:

- explain how the proper function of the nervous system depends upon its anatomical and biochemical integrity.
- outline and distinguish between the peripheral and central divisions of the somatic nervous system and between the functions of the somatic and autonomic nervous systems.
- describe how the nervous system can be examined and imaged.
- describe the disturbances induced by congenital defects, trauma, disease or ageing.
- describe the properties of cutaneous and special sense organs and their central representation.
- outline the role of the cortex, the basal ganglia and the cerebellum in the integration of movement.
- describe the blood supply of the brain and the mechanisms and consequences of its failure.
- demonstrate an understanding of the role of the meninges and cerebro-spinal fluid in trauma and disease.
- outline the role of the cortical association areas, the limbic system and the reticular activating centres in the regulation of the 'higher functions' of the brain, including a consideration of sleep and consciousness.
- describe the neuroanatomy and neurophysiology of pain and its clinical management.
- relate the anatomy of the cranial nerves to their function and clinical examination.
- describe the molecular and physiological bases of common neurological, psychological and psychiatric conditions

in order that students will be able to:

- Integrate the knowledge derived from the study of this unit with that derived from other units
- Formulate solutions to clinical problems using the knowledge & understanding derived from the study of this unit
- Make inferences across their knowledge base in order to solve problems related to the practice of medicine

Methods of Assessment

Feedback

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Integration for Clinical Application

Semester	4
Timetabled hours	28
Self-directed hours	28
Unit lead	Dr Laura Mongan Dr Chris Prideaux
GMC Outcome(s)	8 a – g, 14 a, b, d; 9 a – g; 10 a – e; 11 a, f, g, j; 11 a – d, f, l, j; 12 a – c; 15 a – f; 20, g, 21 a, b, d, e; 22 a, b; 23 a, d, h 23 c – e, 23g, 23 j;

Aims

To enable students to reflect on the development of their knowledge base through exploration of fundamental principles from new perspectives such as the in the context of specific patient groups (e.g. older people and children).

Outcomes

By the end of this unit you should:

- Effectively link together topics in the context of their application to common and important clinical problems
- Identify the appropriate level of detailed knowledge and understanding to apply to a particular clinical problem
- Be able to relate the relevant basic medical sciences, social and behavioural sciences, clinical sciences and broader issues to any particular patient problem
- Describe common disorders of the breast, in particular breast cancer and its treatment
- Describe common disorders of the skin

in order that students will be able to:

- Integrate the knowledge derived from the study of this unit with that derived from other units
- Formulate solutions to clinical problems using the knowledge & understanding derived from the study of this unit
- Make inferences across their knowledge base in order to solve problems related to the practice of medicine

Methods of Assessment

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Formative Assessment

An opportunity will be provided at least once per semester to experience an assessment of unit content comprised of items of similar format, style and standard as the summative assessment.

Summative Assessment

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Undergraduate Programme Training Curriculum for Stroke Medicine and Interprofessional Working

Semester	4
Timetabled hours	40
Self-directed hours	40
Unit lead	Prof Nick London
GMC Outcome(s)	22 a - d

Aims

To provide the student with an insight into many aspects of modern medicine and multiprofessional working and allow development of respect for and understanding of the roles of other multiprofessional staff, through exploration of the key principles as exemplified by the function of a stroke unit in delivery of patient care.

Outcomes

By the end of this unit you should be able to:

- Effectively link together topics in the context of their application to common and important clinical problems
- Identify the appropriate level of detailed knowledge and understanding to apply to a particular clinical problem
- Be able to relate the relevant basic medical sciences, social and behavioural sciences, clinical sciences and broader issues to any particular patient problem
- Analyse the central role of the patient/service user and carers within interprofessional team working
- Describe the range and roles of professionals working to meet the health and social care needs of individuals and the local population

in order that students will be able to:

- Integrate the knowledge derived from the study of this unit with that derived from other units
- Formulate solutions to clinical problems using the knowledge & understanding derived from the study of this unit
- Make inferences across their knowledge base in order to solve problems related to the practice of medicine

Methods of Assessment

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Compassionate, Holistic Diagnostic Detective Course (Early Clinical Apprenticeship)

Semester	1 - 4
Timetabled hours	126
Self-directed hours	164
Unit lead	Dr Ani Sood Dr Adrian Stanley Prof Nick London
GMC Outcome(s)	9 a, b, d, e, 10 a, b, d, e; 13 a – g; 14 a – h; 15 a - f

Aims

To enable the student to carry out a patient-centred consultation and interpret the findings to generate appropriate working diagnoses, to take and record a history from a patient, perform a physical examination of the main systems of the body and understand the importance of the patient perspective in diagnosing and managing patient problems.

To enable students to develop the skills necessary to access, filter and evaluate information from a range of sources applicable to their development as future doctors.

To enable the student to develop their communication and interpersonal skills and give them the opportunity to understand the importance of these for consultations between doctors and patients, using simulation.

To provide an introduction to the knowledge and skills necessary to take a history and perform a physical examination on patients for each of the main body systems, using simulation.

To facilitate enhancement of health in both patients and practitioners through exploration of a holistic approach to the management of stress and promotion of strategies for maintenance of wellbeing.

To enable the student to apply the key principles of biopsychosocial model for health and illness in their development of a patient-centred approach to consultation.

To enable continuing development of clinical skills through practice with real patients in hospital and general practice settings.

To enable the student to develop the necessary understanding of the ethical basis of decision making in medicine in order to manage the wide range of ethical issues they will encounter during their professional life.

Outcomes

Knowledge

The student should be able to:

- Explain the importance of effective communication skills and the need for a patient-centred approach in the diagnosis and management of patients' problems.
- Describe how the use of effective communication skills can enhance the doctor-patient relationship and improve patient care.
- Apply their understanding of normal anatomy, physiological and psychological functioning to the symptoms experienced by patients and to the signs found by examination.
- Describe the integral role of information retrieval skills in the study and practice of medicine.
- Describe the ethical principles and values that underpin good medical practice.

Skills

The student should be able to:

- Use a patient-centred approach to explore common symptoms and elicit key information about a patient's medical, family and psycho-social histories.
- Recognise and respond appropriately to a patient's emotions.
- Give information to a patient about an illness or disease process appropriate to their level of understanding.
- Make an assessment of a patient's mental state.
- Perform a general examination of a patient, including their general demeanour, and their skin and superficial tissues.
- Demonstrate the communication skills needed to prepare a patient for, and to facilitate the performance of, a physical examination.
- Demonstrate competence in physical examination of each of the body systems and detect common clinical signs.
- Correctly interpret and apply information obtained from the patient history and examination to generate appropriate working diagnoses.
- Demonstrate an awareness of safe practice in the clinical environment, for example, an awareness of hand hygiene and moving and handling issues.
- Demonstrate an awareness of the ethical and legal concepts of competency, informed consent, autonomy and confidentiality as applied to a healthcare context.

Attitudes

The student should demonstrate:

- Appropriate professional behaviour in a clinical setting.
- An unconditional positive regard for patients and their carers, and for colleagues.
- A willingness to work with and learn from patients with diverse backgrounds and personal lifestyles.
- A desire to support peers in learning and personal development.

in order that students will be able to:

- Integrate the knowledge derived from the study of this unit with that derived from other units
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Methods of Assessment

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3. Application of the ability to interpret the results of clinical investigations
4. Application of skills in communication, physical examination, professionalism and the ethical basis for the practice of medicine

Reflective Practice and Professional Identity

Opportunities for reflection on development of your professional identity

Very Early Clinical Experience

Compassionate, Holistic Diagnostic Detective Course

Undergraduate Programme Training Curriculum for Stroke Medicine and Interprofessional Working

Personal Tutor meetings

What is reflection and how should you accomplish it?

Reflection is the process by which a learner or practitioner thinks objectively about a learning experience and integrates their review of what went well and what could be improved into their practice.

The information that you will have available to objectively review will be from a range such as advice from a tutor in a group working session, feedback on quizzes, advice from your tutor in clinical sessions or a skills facilitator.

Some of this, such as your in-course quizzes, will be collated for you. Some of it, such as tutor feedback, you will need to record for yourself in your e-portfolio.

Your Personal Tutor will encourage you to discuss the feedback you have had from this range of sources and will guide you in the early stages on how to best capture your thoughts.

Ultimately reflection is an essential element of professional practice and you will need to learn to do this independently and instinctively.

You should routinely ask yourself “what went well?” and “even better if?”