



HKUSPACE

香港大學專業進修學院
HKU School of Professional and Continuing Education

HIGHER CERTIFICATE IN MEDICAL LABORATORY SCIENCE

醫事技術高級證書

PROGRAM CODE: HS027A

APPLICATION CODE: 2145-HS027A

QF Level: 4

QR Registration No.: 15/003268/L4

QR Registration Validity Period: 23 Oct 2015 - on-going

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🌐: <http://hkuspace.hku.hk/prog/higher-cert-in-medical-laboratory-science>



HIGHLIGHTS

- Higher Certificate in Medical Laboratory Science is a two-year part-time programme designed for technical staff working in medical related laboratories to pursue a professional education in medical laboratory science.
- The programme is demanding and can be considered as a gateway to academic and professional advancement. The Higher Certificate is equivalent to the UK Higher National Certificate (HNC) courses in Medical Laboratory Science and is recognized by the Edinburgh Napier University (UK) as an access qualification to its degree course in Biological Sciences (a part-time and locally taught programme jointly offered by HKU SPACE and Edinburgh Napier University).
- **PROFESSIONAL RECOGNITION:** holders of this Higher Certificate with relevant medical laboratory experience can apply to register under the Medical Laboratory Technologists (Registration and Disciplinary Procedure) Regulation 1990 to practice in medical laboratories of Hong Kong.

PROGRAMME STRUCTURE

Three modules, Biochemistry, Physiology and Integrated Medical Laboratory Studies are *mandatory*, whilst the **fourth** module is selected as an *elective*. The structure of the programme is as follows:

Year 1	Year 2
<p>Compulsory Modules Biochemistry 1 Physiology 1 Integrated Medical Laboratory Studies 1 Plus ONE of the following elective specialist modules: Clinical Biochemistry 1 Haematology and Serology 1 Histopathology and Cytology 1 Medical Microbiology 1</p>	<p>Compulsory Modules Biochemistry 2 Physiology 2 Integrated Medical Laboratory Studies 2 Plus ONE of the following elective specialist modules: Clinical Biochemistry 2 Haematology and Serology 2 Histopathology and Cytology 2 Medical Microbiology 2</p>

The number of electives offered will be subject to demand and the availability of teaching resources. In Year 2, students must study the same elective specialist module as in Year 1.

COURSE CONTENT (COMPULSORY MODULES)

BIOCHEMISTRY

Topics include the revision on physical chemistry; contemporary nuclear chemistry; basic instrumentation and laboratory safety; chemistry of amino acid, peptides and protein; enzymology; carbohydrate metabolism; bioenergetics, mitochondrial electron transport and oxidative phosphorylation; lipid metabolism and ketosis; cholesterol and steroids; amino acid metabolism; nucleic acids, nucleotides and genetic materials; genetic code and transcription; protein synthesis and gene regulation; membrane biochemistry and transport of metabolites; biochemical aspects of hormone action; cancer biochemistry; introduction to cytogenetics; recombinant DNA technology; principles of molecular diagnosis.

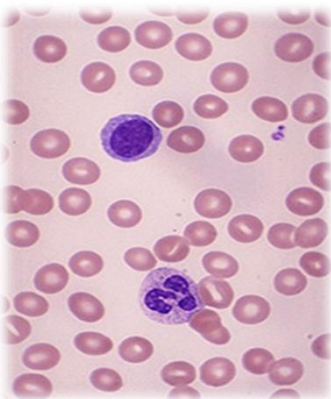


PHYSIOLOGY

Topics include the fundamentals of cell biology; functions of body fluids; introduction to cardiovascular system; bloods and the lymphatic system; gaseous exchange and the respiratory system; nerve and muscle; nutrition and the alimentary system; use of laboratory animals; nervous system: special senses (coordination and response) and central / peripheral / autonomic nervous system; introduction to endocrine system; reproduction & pregnancy; introduction to urinary system; pathophysiology of special tissues.

INTEGRATED MEDICAL LABORATORY STUDIES

The Integrated Medical Laboratory Studies module consists of: Clinical Biochemistry / Haematology and Serology / Medical Microbiology / Histopathology and Cytology for non-specialists and Laboratory Management.



COURSE CONTENT (ELECTIVE MODULES)

CLINICAL BIOCHEMISTRY

Topics include: fundamentals of chemical pathology; medical informatics & laboratory information system; laboratory accreditation; laboratory automation; spectroscopic/chromatographic/immunochemical/electrophoretic techniques; method evaluation; point of care testing (PCOT); water and electrolyte balance; acid base disorders; endocrine disorders; inborn errors of metabolism; liver diseases and testing; disorders of pancreas and carbohydrate metabolism; therapeutic drug monitoring toxicology; renal diseases and testing; thyroid diseases and testing; molecular diagnosis of genetic diseases.

HAEMATOLOGY AND SEROLOGY

Haematology: Topics include the haematopoietic system; basic haematology techniques; blood cell morphology; clinical immunology; erythrocyte disorders and laboratory investigations; leucocyte disorders and laboratory testing; laboratory aspects for diagnosis and classification of haematological disorders; haemostasis and thrombosis; molecular testing; quality control in haematology and serology laboratories.

Serology: Topics include the blood group serology; red cell antigen-antibody reactions; compatibility testing; blood banking and transfusion practices; the major histocompatibility complex and HLA system; bone marrow transplant.

HISTOPATHOLOGY AND CYTOLOGY

Topics include the principles and applications of light and specialized microscopy; histology of principal organs and specialized tissues; tissue preparation, processing and sectioning; basic principles and methods in dyes and staining; cytology and exfoliative cytology; enzyme histochemistry, immunohistochemistry and electron microscopy; introduction to general pathology; molecular pathology techniques and clinical applications in histopathology; laboratory safety and quality assurance.



MEDICAL MICROBIOLOGY

Topics include principles and methods of sterilization and disinfection; clinically significant bacteriology; bacteriological staining; antimicrobial agents; parasitology and examination of medically important parasites; virology, vaccinology, viral culture, and virus quantification & identification; immunology and immunological testing; medical mycology and cultivation & identification of pathogenic fungi; molecular diagnostics and bioinformatics.

COURSE DURATION AND COMMENCEMENT

The course lasts for two calendar years. The programme commences in **mid-September 2024** and will normally meet three evenings a week plus summer classes from June to August. The classes typically start at 6:30 pm and run for 2-3 hours. The tentative schedule is as follows:

Module	Class Day (tentatively scheduled)
Biochemistry	Every Friday
Physiology	Every Tuesday
Integrated Medical Laboratory Studies (classes are conducted from June to August)	Monday / Wednesday / Friday
Clinical Biochemistry	Every Thursday
Haematology and Serology	Every Thursday
Histopathology and Cytology	Every Monday
Medical Microbiology	Every Wednesday

TEACHING VENUE

- HKU SPACE Learning Centres
- Queen Mary Hospital, Pokfulam Road, Hong Kong
- LKS Faculty of Medicine Building, The University of Hong Kong, Sassoon Road, Hong Kong

EXAMINATIONS

- Examinations will be held at the end of each academic year (Year 1 and Year 2)
- Student who failed in only one paper is required to take a supplementary examination in that paper on payment of a re-examination fee
- The pass marks for written and practical examinations are 40% and 50% respectively.

AWARD

The Higher Certificate in Medical Laboratory Science will be awarded to candidates who have fulfilled the following criteria:

- an attendance of 75%;
- a pass in all examinations; and
- satisfactory completion of coursework

MEDIUM OF INSTRUCTION

English

ADMINISTRATIVE / TEACHING STAFF

The programme will be taught by a panel of part-time tutors who are working in the universities, hospitals, government, government-subsidized services or in private practice. The following HKU SPACE staff are responsible for the overall course administration.

Dr Tian Zhipeng, BSc, PhD
Dr Mai Ka Ki Keith, BES, PhD
Dr Huang Suihong, BSc, MSc, PhD

ADMISSION REQUIREMENTS

Applicants shall have attained:

- a UK Ordinary National Certificate or Ordinary Technical Education Council Certificate, or an Ordinary Certificate in Medical Laboratory Science awarded within the HKU system through HKU SPACE, or a Diploma in Medical Laboratory Science from the HK Polytechnic University; **OR**
- HKALE Grade E in 2 AL science subjects, one of which must be Chemistry, and 5 passes in HKCEE, including 2 science subjects and Level 2* in English Language; **OR**
- HKDSE Examination Level 2 or above in 5 subjects including English Language, Chinese Language and preferably Chemistry; and a Diploma in a Biological Science or Biomedical Science related discipline, **OR**
- a qualification deemed to be equivalent to the above.

The applicant is also expected to be employed in a medical-related laboratory and should normally be sponsored by his employer, and preferably with 2 years' practical laboratory experience.

Applicants with other equivalent qualifications will be considered on individual merits.

- * With effect from 2007, HKU SPACE recognizes Grade E previously awarded for English Language (syllabus B) and Grade C in the case of English Language (syllabus A) at HKCEE as an acceptable alternative to Level 2 in English subject at HKCEE.

FEES

Course fee (Year 1) in one single instalment: **HK\$90,000***

Course fee (Year 2) in one single instalment: **HK\$95,000***

Application fee: **HK\$150** (non-refundable)

*Course fee is subject to review. Please refer to the programme website for the latest updates.

INFORMATION AND APPLICATION

Application forms are available:

- Online:** <http://hkuspace.hku.hk/prog/higher-cert-in-medical-laboratory-science>
- By e-mail:** rosie.so@hkuspace.hku.hk

To apply please return the completed application form together with

- photostat copies of relevant certificates and transcripts, and your HKID card;
- a reference letter ([original copy](#)) from your current employer giving details of job position, current job responsibilities, start date of employment. Recommendations from employers will also be welcomed; and
- application fee in form of a crossed cheque made payable to "HKU SPACE" to College of Life Sciences and Technology, HKU SPACE, 13/F, Fortress Tower, 250 King's Road, North Point Hong Kong. Attn: Miss Rosie So. **Sufficient postage should be paid to avoid unsuccessful delivery of application.**

Application Period: 14 February – 13 April 2024
Applicants will be notified of the result by September 2024