REGULATIONS FOR THE POSTGRADUATE DIPLOMA IN MOLECULAR AND DIAGNOSTIC PATHOLOGY (PDipMDPath)

(*See also General Regulations and Regulations for Taught Postgraduate Curricula)*

M129 Admission requirements

To be eligible for admission to the curriculum leading to the Postgraduate Diploma in Molecular and Diagnostic Pathology, a candidate shall:

(a) comply with the General Regulations; and
(b) comply with the Regulations for Taught Postgraduate Curricula, and
(c) hold a Bachelor's degree with honors or a degree of MBBS of this University, or another qualification of equivalent standard from this University, or from another University or comparable institution accepted for this purpose; and
(d) satisfy the examiners in a qualifying examination, if required.

M130 Qualifying examination

(a) A qualifying examination may be set to test candidates' formal academic ability or their ability to follow the courses of study prescribed. It shall consist of one or more written papers or their equivalent and may include a project report; and

(b) Candidates who are required to satisfy the examiners in a qualifying examination shall not be permitted to register until they have satisfied the examiners in the examination.

M131 Award of diploma

To be eligible for the award of the Postgraduate Diploma in Molecular and Diagnostic Pathology, a candidate shall

(a) comply with the General Regulations; and
(b) comply with the Regulations for Taught Postgraduate Curricula, and
(c) complete the curriculum requirements and satisfy the examiners in accordance with the regulations set out below.

Advanced standing for up to a maximum of 12 credits, for the Postgraduate Diploma in Molecular and Diagnostic Pathology, may be granted to a candidate who has successfully completed one or more courses in the Postgraduate Certificate in Molecular and Diagnostic Pathology (PCMDPath); subject to the condition that such course(s) should be completed no more than 2 years prior to the commencement of the PDipMDPath curricula.

M132 Period of study

The curriculum shall normally extend over two academic years of part-time study . Candidates shall not be permitted to extend their studies beyond the maximum period of registration of four academic years of part-time study, unless otherwise permitted or required by the Board of the Faculty..

M133 Completion of curriculum

To complete the curriculum, a candidate shall:

(a) satisfy the requirements prescribed in TPG 6 of the Regulations for Taught Postgraduate Curricula; and

(b) take not less than 63 credits in the manner specified in these regulations and the syllabuses, and follow the instructions as prescribed in the syllabuses and complete satisfactorily all written and/or practical and/or clinical work; and

(c) satisfy the examiners in the course by continuous assessments and/or written examinations; and

(d) complete a satisfactory capstone project.

A candidate who fails to fulfil the requirements within the prescribed maximum period of study shall be recommended for discontinuation under the provision of General Regulation G12.

M134 Assessment

(a) A candidate who has failed to satisfy the examiners in a course may be permitted
   (i) to attend a re-examination; or
   (ii) to re-submit the failed coursework(s); or
   (iii) to repeat the course(s) and to re-take the prescribed examination(s).

(b) A candidate who has failed to satisfy the examiners in the examination of the project report, but has satisfactorily completed the prescribed work, may be permitted to resubmit the project report and to re-present it within a specified period of time.

M135 Grading systems

Individual courses shall be graded according to the grading system of 'Pass' or 'Fail'. On successful completion of the curriculum, a candidate who has shown exceptional merit may be awarded a distinction as determined by the Board of Examiners for the degree.

SYLLABUSES FOR THE
POSTGRADUATE DIPLOMA IN MOLECULAR AND DIAGNOSTIC PATHOLOGY (PDipMDPath)

Overall curriculum structure
Candidates are required to complete a minimum of 63 credits for the Postgraduate Diploma in Molecular and Diagnostic Pathology.

Students are required to choose one of the two tracks below:

Project Track

Candidates should complete three Molecular Pathology (27 credits), and two Diagnostic Pathology Courses (18 credits) and submit a satisfactory project report (18 credits) on a topic approved by the Board of Studies.

Course Track

Candidates should complete four Molecular Pathology Courses (36 credits) and three Diagnostic Pathology Courses (27 credits).

Candidates should satisfy the examiners in all continuous assessments and/or written examination. PATH6006 and PATH6009 are assessed through coursework assessment (100%) and PATH6008 is assessed through examination (100%). The remaining courses are assessed through examination (0-60% for Molecular Pathology Courses and 0-50% for Diagnostic Pathology Courses) and coursework assessment (40-100% for Molecular Pathology Courses and 50-100% for Diagnostic Pathology Courses).

PATH6001 Principles and Techniques of Molecular Pathology (9 credits)

This course will cover the following topics: introduction to diagnostic molecular pathology tests; techniques of molecular pathology- RNA, DNA and protein analysis; principles and applications of quantitative-PCR; principles of automated DNA sequencing and various methods of genotyping and mutation analysis; human identity by DNA typing; basic concepts in conventional cytogenetics and molecular cytogenetics; in-situ hybridization techniques (ISH, FISH, CISH, SISH); principles and applications of flow cytometry; emerging technologies -gene expression profiling and next generation sequencing; and laboratory management issues in molecular testing.

PATH6002 Clinical Applications of Molecular Testing (9 credits)

This course provides an overview of the principles of HPV testing, its clinical relevance and the various methods of genotyping; hepatitis B virus infection – testing for viral load and HBV DNA mutants detection; KRAS mutation detection for colorectal cancer; quantification of EBV DNA plasma for EBV associated diseases; PCR for gene rearrangements and translocations for haematolymphoid malignancies and soft tissue tumors; gene expression profiling for haematolymphoid malignancies; detection of BCR/ABL fusion transcript and kinase domain mutation in CML; methodologies for detection of EBV DNA in plasma, gene rearrangement studies and gene expression profiling for lymphoma diagnosis; principles of HPV testing, its clinical relevance and the various methods of genotyping; EGFR mutation in lung cancer; c-kit mutation in GISTs/RET and Menin gene mutation in MEN syndromes; application of in-situ hybridization tests in histopathology and bladder cytology; and laboratory management issues in molecular testing.

PATH6003 Fundamentals of Genetic Testing for Hereditary Disorders (9 credits)

This course provides a comprehensive introduction to molecular genetics; molecular genetics in paediatrics; genetic testing for familial colorectal cancer; genetic testing for familial breast and ovarian cancer; Genetic Diagnosis of Globin Disorders; molecular genetics of Lipid Disorders; and laboratory management issues in molecular testing.

PATH6004 Chemical Pathology, Diagnostic Haematology and Transfusion Medicine (9 credits)

This course will cover topics on the interferences in laboratory testing; clinical toxicology; diabetes mellitus and endocrine disorders; renal and liver function tests; cardiac markers; point-of-care testing; tumor markers; diagnostic haematology test; transfusion medicine; and laboratory management.

PATH6005 Essential Anatomical Pathology for Clinicians (9 credits)

Topics include tumors of the breast; soft tissue and bone tumors; tumors of the respiratory tract; tumors of the central nervous system; endocrine tumors; pathology of the liver and GI tract; haematolymphoid malignancies: relevance of classification; urologic oncology; Ccytological, histopathological and molecular devices for diagnosis and management of gynaecological pathology; common gynaecological disease; and laboratory management.

PATH6006 Capstone Project Report (18 credits)

Candidates, who have opted for the project track, are required to submit a capstone project report of at least 3,000 words based on a clinical and/or laboratory project which should be conducted over a period of at least 3 months within the candidate's own hospital or practice. It should reflect an application of the knowledge acquired from this course. The candidate is expected to design the capstone project related to his/her work situation and have it conducted from his/her workplace. Students are required to consult the supervisor for guidance in the selection of topic and writing of the capstone project report.

PATH6007 Practical Course in Laboratory Methods (9 credits)

This course provides practical sessions on tissue processing, immunohistochemistry and histological analysis; basic tissue culture techniques and flow cytometry analysis; extraction methods for DNA, RNA, protein and electrophoresis; and reverse transcription, polymerase chain reaction, and DNA sequencing.

PATH6008 Molecular Microbiology and Infectious Diseases Update (9 credits)

The Molecular Microbiology component includes the following topics:

Clinical application in bacteriology - bacterial pathogens: typical and atypical, mycobacterium species, MALDI-TOF-MS technology and application, and molecular approaches for the diagnosis of sepsis, infections of gastrointestinal tract and central nervous system; clinical application in virology - viral pathogens: hepatitis, enteric and respiratory viruses; rapid quantitation of HIV and drug resistance determination; clinical application in mycology and parasitology - fungal pathogens, parasitic pathogens; limitations and future perspectives of genomic techniques; clinical applications in epidemiological surveillance and outbreak management - principles of molecular phylogenetic analysis and molecular typing method; and laboratory and epidemiological considerations for data interpretation and Limitations and future perspectives.

Students are required to attend any one of the six courses under the Infectious Disease Update offered by HKU Department of Microbiology which include the following:

- Infectious disease update and emerging infections
- Infectious disease emergencies, indwelling device and surgical infections
- Common problems in infectious diseases
- Radiology and radionuclide imaging in ID; genitourinary medicine and HIV problems
- Surprises in daily medical practice: tropical diseases in the developed world
- Infections in immunocompromised hosts and common infective problems in general practice

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PATH6009 Clinical Applications of Genetic Testing in Inherited Diseases and Genetic Counselling (9 credits)

This course introduces the general principles of cytogenetics, biochemical genetics and molecular genetics in genetic testing and the various laboratory techniques for identification of disease-causing mutations. Through the practical sessions and group discussion, students will learn how to read a laboratory report. Topics will include principles of genetic counselling; ethical and legal aspects; biochemical diagnosis of acute IEM patients; SNP arrays in clinical practice; bioinformatics for mutation reporting; extended newborn screening for metabolic disease; inherited metabolic disease; endocrine disease and neuromuscular disease; neurogenetics and inherited bone disease; pharmacogenetics; constitutional cytogenetics; molecular cytogenetics; next-generation Sequencing – hardware, software and clinical application; practicum: interpretation of reports; tutorials on inherited cardiac disease, mitochondrial disease, lysosomal storage disease, autistic spectrum disorder. Laboratory visits to genetic laboratories in Hong Kong will be arranged.

PATH6010 Renal Pathology, Immunology and Transplant Related Pathology (9 credits)

This course will cover topics on the basic immunology concepts in relation to transplantation; role of immunogenetics in transplantation; basics of renal biopsy: laboratory handling and principles of pathological interpretation; native renal biopsy: glomerular diseases and tubular, interstitial and vascular diseases; allograft biopsy: introduction and banff classification of renal transplant pathology and allograft pathology; liver transplant pathology; lung transplant pathology; cardiac transplant pathology; bone marrow transplant related pathology; basic techniques and management in clinical laboratory immunology; routine immunochemistry, autoantibody and clinical laboratory immunology tests.
