

**THE UNIVERSITY OF HONG KONG
LI KA SHING FACULTY OF MEDICINE**

Department of Pathology, School of Clinical Medicine
Master of Molecular and Diagnostic Pathology (MMDPath)

Credit Unit Statement

The Master of Molecular and Diagnostic Pathology curriculum requires 69 credits, consisting of 3 core courses (9 credit units in each course), 20 elective courses (3 or 6 or 9 credit units in each course; comprising Molecular Pathology Courses, Diagnostic Pathology Courses and courses co-offered with Master of Medical Sciences (available for PDipMDPath graduates only); together with 18 credit units of capstone experience (dissertation), requiring fulfilment of a minimum of 69 credit units of teaching and prescribed work. The total hours of student learning depending on the courses taken range from 1,645 to 1,657 hours, which entails 162 – 170 total contact hours.

CORE

Course Code	Course Name	Credits
MMDP7001	Principles and Techniques of Molecular Pathology	9
MMDP7002	Clinical Applications of Molecular Testing	9
MMDP7003	Fundamentals of Genetic Testing for Hereditary Disorders	9
MMDP7006	Dissertation	18

ELECTIVES

Molecular Pathology Courses		Credits
MMDP7007	Practical Course in Laboratory Methods	6
MMDP7009	Clinical Applications of Genetic Testing in Inherited Diseases and Genetic Counselling	9
MMDP7019	Applications of Emerging Technologies for Genetic Testing	9

Diagnostic Pathology Courses		Credits
MMDP7004	Chemical Pathology, Diagnostic Haematology and Transfusion Medicine	9
MMDP7005	Essential Anatomical Pathology of Epithelial tumors	6
MMDP7015	Essential Anatomical Pathology of Non-epithelial tumors	3
MMDP7008	Molecular Microbiology	3
MMDP7010	Renal Pathology, Immunology and Transplant Related Pathology	9
MMDP7011	Clinical Placement in Diagnostic Molecular Pathology	6
MMDP7012	Clinical Placement in Haematology	6

MMDP7013	Clinical Placement in Chemical Pathology	6
MMDP7014	Clinical Placement in Immunology	6

Master of Medical Science courses available for PDipMDPath graduates only		Credits
MMDP7020	Molecular Genetics and Cytogenetics in Cancer	6
MMDP7021	Molecular and Clinical Laboratory Immunology Methods and Applications	3
MMDP7022	Blood Cell and Bone Marrow Pathology	3
MMDP7023	Current Topics and Techniques in Immunology	3
MMDP7024	Laboratory Methods and Instrumentation	3
MMDP7025	Recent Advances in Cancer Biology	3
MMDP7026	Principles to Genetic Counselling	3
MMDP7027	Practical Bioinformatics	3

1. *Core and Molecular Pathology courses*

These courses focus on theories, concepts of molecular pathology and genetics, and the various molecular techniques used for molecular diagnostics. After completion of the Core and Molecular Pathology Modules, the student should be able to know when the relevant molecular tests should be considered and what materials should be used for the analysis; to understand what the test results convey and appreciate the pitfalls and possible limitations of the various molecular techniques used; to know how to identify individuals or families who will benefit from molecular testing; to understand how genetic testing can help patients and families through prophylactic screening and treatment; to discuss the interpretation of molecular test results with patients and clinical colleagues; and to apply understanding of laboratory management issues to improving utilization of resources at their workplace.

They are taught predominantly through lectures, supplemented by tutorials/practical demonstration, site visits, and test/self-assessment exercises. Summative assessment may be comprised of both coursework and examination. Assessment will be 40% through coursework (including self-assessment exercises, participation forum, tutorials, practicals and performance in class) and 60% through examination, except MMDP7009 which is assessed (100%) through coursework only. Outputs include test performance and assignments which have no word requirement.

2. *Diagnostic Pathology courses*

These courses focus on theories, and concepts of up-to-date practical knowledge on diagnostic tests for scientists, laboratory managers and clinicians, the Clinical Placements supplementing knowledge with practical experience. After completion of the Diagnostic Pathology Modules, the student will be able to select and interpret chemical pathology and immunology tests for diagnosis and management of patients; to interpret basic haematology and transfusion serology test results for diagnosis and monitoring of diseases and handling transfusion needs of patients; to better understand histology and cytology reports and to know when and what further investigations may be needed; to appreciate the role and limitations of ancillary tests in assisting with diagnosis – frozen section, sentinel lymph node biopsy, FNA cytology, immunohistochemistry; and to apply understanding of laboratory management issues to improving the cost-effective use of laboratory services.

The courses are taught predominantly through lectures, supplemented by tutorials/practical demonstration, site visits, and test/self-assessment exercises. The Clinical Placements provide practical exposure to the respective laboratories of Diagnostic Molecular Pathology,

Haematology, Clinical Chemistry and Immunology, with first-hand observation experience in handling of clinical samples for diagnostic and genetic testing.

Summative assessment may be comprised of both coursework and examination. Assessment for MMDP7011, MMDP7012, MMDP7013 and MMDP7014 will be assessed (100%) through coursework. MMDP7008 will be assessed (100%) through examination. The other courses are assessed 50% through coursework and 50% through examination. Outputs may include test performance and assignments which have no word requirement.

3. *Master of Medical Science courses available for PDipMDPath graduates only*

These courses are part of the Master of Medical Science curriculum, made available for recent PDipMDPath graduates who wish to be granted advanced standing for the MMDPath. MMDP7020, MMDP7021, MMDP7022, MMDP7023, MMDP7024, MMDP7025 are courses taught by the Department of Pathology which cover topics related to molecular genetics of cancer (MMDP7020), application of clinical laboratory immunology (MMDP7021), haematolymphoid and blood cell related disorders (MMDP7022), innate and adaptive immunity (MMDP7023), practical applications of laboratory techniques employed in medical research (MMDP7024), and emerging concepts in cancer biology (MMDP7025) respectively. MMDP7026 taught by the Department of Paediatrics and Adolescent Medicine provides the basis of understanding human genetics and genetic disorders, leading to an overview of the roles and duties of a genetic counsellor in genetic assessment. MMDP7027 taught by the School of Biomedical Sciences provides a basic understanding of the principles and latest development and tools in bioinformatics.

The courses are taught predominantly through lectures, supplemented by workshops, discussion and E-Learning. Summative assessment may be comprised of both coursework and examination. Assessment will range from 20-60% through coursework and corresponding 40-80% through examination. Outputs include test performance and assignments which have no word requirement

MMDP7001 Principles and Techniques of Molecular Pathology (9 credits)

Total study load (hours)		196
Total contact hours		27
Output requirements:		
Coursework	Self-assessment exercises Participation Forum Tutorials/practicals	40%
Examination	Multiple Choice questions/ Short answer questions	60%

MMDP7002 Clinical Applications of Molecular Testing (9 credits)

Total study load (hours)		202
Total contact hours		27
Output requirements:		

Coursework	Self-assessment exercises Participation Forum Tutorials/practicals	40%
Examination	Multiple Choice questions/ Short answer questions	60%

MMDP7003 Fundamentals of Genetic Testing for Hereditary Disorders (9 credits)

Total study load (hours)		193
Total contact hours		30
Output requirements:		
Coursework	Self-assessment exercises Participation Forum Tutorials/practicals	40%
Examination	Multiple Choice questions/ Short answer questions	60%

MMDP7006 Dissertation (Capstone Report) (18 credits)

A dissertation of at least 5,000 words (excluding references), constituting at least 8 contact hours, based on clinical or laboratory data obtained from the candidate's or supervisor's workplace or practice, or a review of existing literature, conducted over a period of at least 3 months. It should demonstrate application of the knowledge acquired from this curriculum, and the write-up of the dissertation entails at least 480 learning hours. It should contain some of the following aspects: assessing the need, applicability/cost effectiveness of specific molecular tests in Hong Kong or abroad; surveying the relative frequency/characteristics of specific disease profiles in relation to molecular/genetic testing; addressing possible drawbacks or ethical issues; quality assurance measures to be considered specifically in this setting, etc. All dissertations may be subject to oral examination.

ELECTIVES

MMDP7007 Practical Course in Laboratory Methods (6 credits)

Total study load (hours)		144
Total contact hours		32
Output requirements:		
Coursework	In-course assignments	40%
Examination	Short/long essay questions/ Open book examination	60%

MMDP7009 Clinical Applications of Genetic Testing in Inherited Diseases and Genetic Counselling (9 credits)

Total study load (hours)		211
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Total contact hours		26
Output requirements:		
Coursework	In-course assignments	100%
Examination	Short/long essay questions	-

MMDP7019 Applications of Emerging Technologies for Genetic Testing (9 credits)

Total study load (hours)		194
Total contact hours		21
Output requirements:		
Coursework	In-course assignments	40%
Examination	Short/long essay questions/ Open book examination	60%

MMDP7004 Chemical Pathology, Diagnostic Haematology and Transfusion Medicine (9 credits)

Total study load (hours)		201
Total contact hours		29
Output requirements:		
Coursework	Self-assessment exercises Participation Forum Tutorials/practicals	50%
Examination	Multiple Choice questions/ Short answer questions	50%

MMDP7005 Essential Anatomical Pathology of Epithelial Tumours (6 credits)

Total study load (hours)		174
Total contact hours		23
Output requirements:		
Coursework	Self-assessment exercises Participation Forum Tutorials/practicals	50%
Examination	Multiple Choice questions/ Short answer questions	50%

MMDP7015 Essential Anatomical Pathology of Non-epithelial Tumours (3 credits)

Total study load (hours)		90
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Total contact hours		16
Output requirements:		
Coursework	Self-assessment exercises Participation Forum Tutorials/practicals	50%
Examination	Multiple Choice questions/ Short answer questions	50%

MMDP7008 Molecular Microbiology (3 credits)

Total study load (hours)		83
Total contact hours		11
Output requirements:		
Coursework	Self-assessment exercises	-
	Tutorials/practicals	
Examination	Multiple Choice questions/ Short answer questions	100%

MMDP7010 Renal Pathology, Immunology and Transplant Related Pathology (9 credits)

Total study load (hours)		200
Total contact hours		21
Output requirements:		
Coursework	Self-assessment exercises Participation Forum Tutorials/practicals	50%
Examination	Multiple Choice questions/ Short answer questions	50%

MMDP7011 Clinical Placement in Diagnostic Molecular Pathology (6 credits)

Total study load (hours)		120
Total contact hours		80
Output requirements:		
Coursework	In-course assignments	100%
Examination	Short/long essay questions	-

MMDP7012 Clinical Placement in Haematology (6 credits)

Total study load (hours)		120
Total contact hours		80
Output requirements:		
Coursework	In-course assignments	100%

Examination	Short/long essay questions	-
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MMDP7013 Clinical Placement in Chemical Pathology (6 credits)

Total study load (hours)		120
Total contact hours		80
Output requirements:		
Coursework	In-course assignments	100%
Examination	Short/long essay questions	-

MMDP7014 Clinical Placement in Immunology (6 credits)

Total study load (hours)		120
Total contact hours		80
Output requirements:		
Coursework	In-course assignments	100%
Examination	Short/long essay questions	-

MMDP7020 Molecular Genetics and Cytogenetics in Cancer (6 credits)

Total study load (hours)		148
Total contact hours		35
Output requirements:		
Coursework	In-course assignments	30%
Examination	Short/long essay questions	70%

MMDP7021 Molecular and Clinical Laboratory Immunology Methods and Applications (3 credits)

Total study load (hours)		72
Total contact hours		18
Output requirements:		
Coursework	In-course assignments	20%
Examination	Short/long essay questions	80%

MMDP7022 Blood Cell and Bone Marrow Pathology (3 credits)

Total study load (hours)		72
Total contact hours		18
Output requirements:		
Coursework	In-course assignments	40%
Examination	Short/long essay questions	60%

MMDP7023 Current Topics and Techniques in Immunology (3 credits)

Total study load (hours)		76
Total contact hours		19
Output requirements:		
Coursework	In-course assignments	60%
Examination	Short/long essay questions	40%

MMDP7024 Laboratory Methods and Instrumentation (3 credits)

Total study load (hours)		80
Total contact hours		20
Output requirements:		
Coursework	In-course assignments	30%
Examination	Short/long essay questions	70%

MMDP7025 Recent Advances in Cancer Biology (3 credits)

Total study load (hours)		80
Total contact hours		20
Output requirements:		
Coursework	In-course assignments	40%
Examination	Short/long essay questions	60%

MMDP7026 Principles to Genetic Counselling (3 credits)

Total study load (hours)		80
Total contact hours		20
Output requirements:		
Coursework	In-course assignments	40%
Examination	Short/long essay questions	60%

MMDP7027 Practical Bioinformatics (3 credits)

Total study load (hours)		90
Total contact hours		24
Output requirements:		
Coursework	In-course assignments	40%
Examination	Short/long essay questions/ Open book examination	60%

October 2023