

Course Title/Code:	Molecular Genetics and Cytogenetics of Cancer (MMPH6140)
Department:	Pathology
Objective:	<ol style="list-style-type: none"> 1. To discuss the genetic basis of cancer and implications for clinical diagnosis, prognostication and disease monitoring 2. To obtain basic knowledge of chromosomal abnormalities in tumour cells, methods for detection and their clinical significance <p>Specific targets:</p> <ol style="list-style-type: none"> 1. Obtain a basic knowledge of the various classes of genes which maybe altered in tumour cells 2. Discuss the types of genetic changes which are found in cancer and its clinical applications 3. Provide evidence for the multistep evolution of cancer 4. Discuss the evidence for genetic susceptibility of cancer 5. Obtain a working knowledge of cytogenetics nomenclature 6. Discuss the various laboratory techniques available for the identification of cytogenetic changes in tumour cells 7. Obtain a basic knowledge of chromosomal changes in leukaemias and solid tumours 8. Discuss the clinical applications of chromosomal analysis
Content:	<ol style="list-style-type: none"> 1. Molecular genetics of cancer: an overview 2. Molecular and cytogenetics of haematological malignancies 3. Genes expression profiling of cancer 4. Molecular genetics of lymphoma 5. Molecular genetics of liver cancer. 6. Introduction to molecular cytogenetic techniques: fluorescence <i>in situ</i> hybridization and comparative genomic hybridization 7. Student presentation on selected topics in molecular pathology
Learning outcome:	<p>On completion of the course, the students are expected to:</p> <ul style="list-style-type: none"> • describe the genetic basis of cancers and explain the implications for clinical diagnosis, prognostication and disease monitoring • distinguish the different types of genetic changes in cancers and their clinical applications • explain the multistep evolution of cancers • discuss the evidence for genetic susceptibility of cancers • show a basic knowledge of chromosomal abnormalities in tumours, describe the methods for detection, and explain their clinical significance • describe the various laboratory techniques available for the identification of cytogenetic changes in tumours, including leukaemias and solid tumours, and the clinical applications
Prerequisite:	None
Duration:	24 contact hours
Continuous assessment:	One essay of 2500 words on a designated topic and to make an oral presentation based on the topic assigned (30%)
Examination method:	Written examination / 2 hours (70%)

Remarks:

Also offered to RPg from other Faculties at HKU