

SEMESTER I & II
LSM4243 TUMOUR BIOLOGY

Prerequisite: LSM2103

Workload: 32 lecture hours + 16 hours (Tutorials/Student Assignments/CAs)

This module aims to help the students understand several key biological processes in tumorigenesis, including cell death/apoptosis, cell cycle, DNA repair and autophagy, etc. The module will also cover key tumor suppressors such as p53 and important oncogenic signals such as Src and YAP. The molecular mechanisms underlying the metastasis process will be discussed. The CA of this module will be conducted by group reports based on topics assigned by the lecturers. The final exam will be close book short essay questions.

S/N	Topics	Lecture hours
L1	Introduction-Process of Tumorigenesis	Shen HM
L2	Hallmarks of Cancer	S Pervaiz
L3	Normal Cell cycle	S Pervaiz
L4	Cancer: Disease of Cell Cycle Dysregulation	S Pervaiz
T1-1	Tutorial/CA by S Pervaiz	S Pervaiz
T1-2	Tutorial/CA by S Pervaiz	S Pervaiz
L5	Apoptosis – Pathways and Detection Techniques	R Taneja
L6	Regulators of apoptosis – I (caspases and adaptors)	R Taneja
L7	Regulators of apoptosis –II (p53 and Bcl2 family)	R Taneja
T2-1	Tutorial/CA by R Taneja	R Taneja
T2-2	Tutorial/CA by R Taneja	R Taneja
L8	DNA repair and Cancer	P Hande
L9	Telomeres, Telomerase and Cancer	P Hande
T3-1	Tutorial/CA by P Hande	P Hande
T3-2	Tutorial/CA by P Hande	P Hande
L10	Src-YAP oncogene	M Sudol
L11	Oncogene in translational medicine	M Sudol
T4-1	Tutorial/CA by M Sudol	M Sudol
T4-2	Tutorial/CA by M Sudol	M Sudol
L12	Autophagy in tumor biology	Shen HM
T5-1	Tutorial/CA by Shen HM	Shen HM
T5-2	Tutorial/CA by Shen HM	Shen HM
L13	Metastasis-I	ASG Lee
L14	Metastasis-II	ASG Lee

	Total Lectures: 28 hrs Tutorials/Student Assignments/CAs: 20 hrs
	Total hours: 48 hrs

TEXT BOOKS (Main References): Selected Research Articles

BASIC SUPPLEMENTARY READINGS:

Robert A Weinberg 2013 The Biology of Cancer (GarlandScience), Second Edition, ISBN-10: 0815342209 ISBN:-13978-0815342205

MODE OF ASSESSMENT:

CA-Reports (50%)

Final Exam (50%, MEQs),

MODULE CO-ORDINATORS:

Prof Shen Han-Ming (han-ming_shen@nuhs.edu.sg)

A/P Reshma Taneja (reshma_taneja@nuhs.edu.sg)

LECTURERS:

Assoc Prof Reshma TANEJA (Tel: 65163236, Email: phsrt@nus.edu.sg)

Prof. SHEN Han-Ming (Tel: 6516 4998 Email: han-ming_shen@nuhs.edu.sg)

Prof. Shazib PERVAIZ (Tel: 6516 6602 Email: shazib_pervaiz@nuhs.edu.sg)

Assoc Prof Marius SUDOL (Tel: 6516 5460 Email: mbims@nus.edu.sg)

Assoc Prof Manoor Prakash Hande (6516 3664, Email: phsmph@nus.edu.sg)

Dr. Ann SG LEE (Tel: 6436 8313, Email: dmslsg@nccs.com.sg)

Updated: Jul 2017