

**SEMESTER I & II**  
**LSM4243 TUMOUR BIOLOGY**

**Prerequisite:** LSM2103

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

**Course description:**

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. How cancer stem cells may play a role in tumorigenesis will be discussed. The molecular mechanisms underlying the metastasis process will be covered. The CA of this module will be individual 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 and Hallmarks of Cancer	S Pervaiz
L2	Apoptosis – Pathways and Detection Techniques	R Taneja
L3	Regulators of apoptosis – I	R Taneja
L4	Regulators of apoptosis –II	R Taneja
T1	Tutorial 1 by R Taneja	R Taneja
T2	Tutorial 2 by R Taneja	R Taneja
L5	Normal Cell cycle	S Pervaiz
L6	Cancer: Disease of Cell Cycle Dysregulation	S Pervaiz
T3	Tutorial 1 by S Pervaiz	S Pervaiz
T4	Tutorial 2 by S Pervaiz	S Pervaiz
L7	Autophagy in tumor biology	Shen HM
L8	Cancer stem cells (CSC) -I	D Ong
L9	CSC -II	D Ong
L10	Role of tumor microenvironment on CSC plasticity	D Ong
L11	Clinician lecture	Lin Xuling
L12	CSC and therapy resistance	D Ong
T5	Tutorial 1 by D Ong	D Ong
T6	Tutorial 2 by D Ong	D Ong
L13	Mechanobiology in cancer	M Sudol
L14	DNA repair and Cancer	P Hande
L15	Telomeres, Telomerase and Cancer	P Hande
T7	Tutorial 1 by P Hande	P Hande
T8	Tutorial 2 by P Hande	P Hande
L16	Metastasis	ASG Lee

S/N	Topics	Lecture hours
		Total Lectures: 32 hrs Tutorials/Student Assignments/CAs: 16 hrs
		<b>Total hours: 48 hrs</b>

**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 (40%)

Final Exam (60%, MEQs)

**MODULE CO-ORDINATORS:**

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**LECTURERS:**

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