

SEMESTER I & II

LSM4227 STEM CELL BIOLOGY

Prerequisite: LSM2102 and LSM2103

Workload: 30 lecture hours + 20 tutorial hours (Discussions/Assignment/Term Paper)

Course description:

This module will provide a detailed and critical introduction in the biology of stem cells and regenerative medicine. Students will investigate the origin of embryonic and adult stem cells and learn biological concepts relating to pluripotency, self-renewal, transdifferentiation, reprogramming and regeneration. The cell-fate determination and differentiation of selected types of cells, with a focus on their potential biological and medical applications, will be presented. Specialized topics on cancer stem cells, wound healing and tissue regeneration will provide a glimpse of how mankind's future could be further shaped.

S/N	Topics	Lecture hours	Tutorial hours
1	Introduction to Stem Cells	4 (Chan WK)	6 (Chan WK)
2	Key Concepts – Pluripotency & Self-Renewal, Differentiation, Reprogramming, Regeneration & Transdifferentiation.	6 (Chan WK)	6 (Chan WK)
3	Differentiation of Specialized Cell Types And Biological Applications of Stem Cells	8 (Chan WK)	4 (Chan WK)
4	Specialized Topics – Human iPS Cells, Cancer Stem Cells, Wound Healing and Tissue Regeneration	12 Sem 1 (Chan WK – 6 h) (Wang S – 6 h) Sem 2 (LYH)	4 Sem 1 (Chan WK – 2 h) (Wang S – 2 h) Sem 2 (LYH)
		30 h	20 h
		Total hours:	50 h

TEXT BOOK (Recommended text):

Please consult IVLE for textbook and reading list

MODE OF ASSESSMENT:

1. CA Tests – 20 %
2. Essay (Term Paper) – 20 %
3. Final Examination – 60 % (closed book)

MODULE CO-ORDINATOR:

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