

LS 643 TOPICS IN RADIATION AND CANCER BIOLOGY
RP Singh*, N Mondal and AB Tiku

S. No.	Topics	Contact hours
1.	Radiation and tissue sensitivity	2
2.	Low dose radiation effects	2
3.	Radiosensitizers and protectors	2
4.	Heritable effects of radiation	2
5.	Radiation-induced carcinogenesis	1
6.	Radiation and cell signaling	2
7.	Experimental approaches in cancer research (<i>in vitro</i> and <i>in vivo</i> models)	2
8.	Oncogenes such as Ras, Src, Wnt etc.	3
9.	Tumor suppressor genes such as p53, and Rb-E2F interaction	2
10.	Cell Cycle regulation in cancer	4
11.	Cellular Signaling in cancer	4
12.	Epigenetic mechanisms: DNA and histone modification, and microRNA in cancer	4
13.	Death receptors, mitochondrial proteins, caspase (apoptosis) and cancer	2
14.	Mechanisms of tumor angiogenesis, invasion and metastasis	4

Suggested Reading:-

1. Molecular Biology of Human Cancers by Wolfgang Arthur Schulz Springer.
2. Biology of Cancer by Robert Weinberg
3. Chemoprevention of Cancer and DNA Damage by Dietary Factors by S. Knasmuller, David M. DeMarini, Ion Johnson, and Clarissa Gerhauser Willey Blackwell Publisher