Name of Faculty		**Faculty of Physical Sciences**		**L: 2 T: 0**			
Name of Course		**Open elective Course**		**Credits: 2**			
Subject/Paper		**Radiation Physics**			**Paper Code**	**PS-1**	**Marks: 50**
Course Cordinator Name: **Contact:**		**Dr. Zuber Akhter** **zuber.akhter@sgtuniversity.org** **9910861245**		**Class Time: 2:00-4:00 pm.**	**Days**	**Wednesday**	
Unit	**Title**	**Time (hrs)**	**Topic**	**Teaching Methodology**	**Assessment Method**		**Teaching Faculty**
Unit-I	**Basics of Radiation Physics**	7 hours	1. Latent images formation and its processing. 2. Various units used for measuring radiation, 3. Half life, decay factor, details about radium, cobalt and cesium. 4. Doze and doze rate, exposure doze, exit doze, surface doze, depth doze, maximum permissible dose, 5. iso-dose charts and their uses.	1.Assignment 2.Seminar 3.SIS 4.Demonstration 5. Power point presentation	1.Assignment 2.Seminar/presentation 3 Class test 4 Sessional Examination 5 End Term Examination		

UNIT - II	**Radiation production and measurement Techniques**	7hrs	1. X–rays–its production, properties and quality 2. Ionization chambers, G.M. Counter 3. Scintillation Counter 4. Interaction of radiation with matter, linear absorption coefficient, 4. Grid, Cones and Filters. 5.Scattered radiations and appliances used to reduce it.	1.Assignment 2.Seminar 3.SIS 4.Demonstration 5.Experiment based learning 6.Power point presentation	**Assessment Method** 1.Assignment 2.Seminar/presentation 3 Class test 4 Sessional Examination 5 End Term Examination	
UNIT - III	**Radiation Protection**	6hrs	1.Radiation Hazards, 2. Protection against it, film badge, pocket 3 Radiation protection of people; Radiation protection of the environment; 4. Radioactive source	1.Assignment 2.Seminar 3.SIS 4.Demonstration 5.Experiment based learning 6.Power point presentation	1.Assignment 2.Seminar/presentation 3 Class test 4 Sessional Examination 5 End Term Examination	

			security, particle physics 5. Statistics related to radiation protection.			

This course is imparting transferable and life skills in the use of various radiation monitoring devices for the operatory as well as personal monitoring devices required for any radiation worker or related professional.

References:

1. Radiation physics for medical physicists by Ervin B. Podgorsak, Second Edition, Springer.
2. Physics for radiation protection; A hand book, Second edition by J.E.Martin
3. A Primer in applied radiation physics by Frederic Alan smith.
4. Fundamentals of nuclear physics by Jagdesh Verma, Roop Chand Bhandari and D.R.S.Somayajulu.