SAMPLE TRAINING TIMETABLE - CHAPTER 5 FROM DIAGNOSTIC RADIOLOGY MODULE

No.	**Sub-module and Subject**	**Necessary materilas/arrangements**	**Competencies acquired**	Days	Comments
5.x	**X-ray tube and generator**		**Understand/measur / compare separate X-ray tube/gen. parameters *(2,3,4,5,14,15,22)**	**7**	
5.1	X-ray tube Components. X-ray tube Characteristics. Loading diagram of a X-ray tube. Some typical X-ray tube characteristics. Special X-ray tube types.	X-ray tube diagrams; Different company brochures; Several types tube inserts	Understand/compare X-ray tube paramet.	2	
5.2	Tube housing - construction. X-ray beam filtration. Light beam diaphragm. HVL measurement. Estimating the total filtration from the HVL. Shielding, leakage radiation.	Tube housing; X-ray radigr. room; Dosemeter; Al plates HVL/Filt. diagrams; ~6 X-ray film/cassettes	Understand/measure X-ray tube filtration	1	Repeated in No.7 as part of a whole QC test
5.3	X-ray tube output parameters (consistency, output variation, linearity). Typical parameters. Factors affecting tube output. X-ray tube output spectrum and distribution. Measuring of the focal spot . Assessing the beam alignment. Seasoning of a new X-ray tube . X-ray tube failure.	X-ray radiogr. room; Dosemeter; calculator, Foc. spot meas. tool; LBD align. tool	Understand/measure /calculate tube output param., focal spot size and LBD. Learn to season the tube	2	same
5.4	Block diagram of the X-ray Generator. Basic electrical circuitries of the HV generator. HV rectification. Electrical safety. kVp assessment with non-invasive kVp meter. kVp waveform and ripple. kVp consistency, accuracy and variation with mA. Typical values. Other ways of kVp assessment. Timer and mA assessment. Typical values.	X-ray gen. diagrams; X-ray radiogr. room; kVp divider; kVp non-inv. meter; oscilloscope; kVp cassette; mA and Timer meters.	Understand/measure kVp with different tools. Assess ripple. Measure mA. time of the exposure	2	same