Title of lesson	Introducing, through practical experience and demonstration, the fundamentals of radio transmission and reception, propagation and health & safety.		
Module theme	**BSW – session 2**	**Date & time**	TBC
Class background	Y10-13. This session will be a voluntary "taster" session for any student. They will observe the equipment and take part in some radio communications.		
Lesson focus	Using the practical example of **demonstrating and using** a radio station: • **know and understand** the principles of High Frequency (HF) electromagnetic radiation and transceiver architecture, feeders, propagation, the value of the ionosphere, station design • **apply** health and safety in use and UTC with regional time zones • **evaluate** their use of the station. •		
Prior knowledge	None assumed		
Success criteria	**All** will observe the radio station in use. **Most** will gain further understanding of the station's principles, construction and operation. **Some** will enjoy the session sufficiently to want to carry on and do more.		

Links to UTCSD Student Leaver Profile		
Core Skills	**Professional & Career experiences**	**Academic & Technical knowledge**
Communicate Through the radio at a long distance including dealing with foreign languages. **Collaborate** Working with others and under close supervision, make a successful contact, including noting different time zones across the world. **Persevere** while trying to contact a distant radio station **Reflect** on how well the station works and what would be needed to improve it. **Respect** the equipment and its value, and H&S considerations.	**Gain qualifications** All work could lead to Foundation amateur radio licence. **A new experience** Opening up another experience.	Gaining an experience of taking part in a technical activity that is new to them.

Outline of lesson		
Event	**Content**	**Timing**
Introduction	Brief introduction to the parts of the station: • power supply • transceiver • AMU • feeder antenna Why we have to be careful and have cordoned off a bit of ground (EMF Exclusion Zone). Operating procedure – <u>Ofcom rules for supervision</u> What can and can't be said on the air – Communications law Call signs and SES call (GB0UTC) NATO alphabet and why UTC and local time zones (and why these are necessary, compare China)	
Development	What's likely to happen? The "script" for a contact (voice and data) **Try it out** (conditions at the time will dictate whether we concentrate on voice or data mode) If using data modes, importance of synchronisation with UTC (GMT) for FT4 and FT8 exchanges. Importance of logging in UTC (GMT) and consideration of local time zones	